ASMB2

Server Management Board



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Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

Safety information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the server.
- When adding or removing devices to or from the server, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing server before you add a device.
- Before connecting or removing signal cables from the server, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing any component to the server, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

About this guide

This user guide contains the information you need when installing and configuring the server management board.

How this guide is organized

This guide contains the following parts:

- **Chapter 1: Product introduction**
  This chapter describes the server management board features and the new technologies it supports.
- **Chapter 2: Installation**
  This chapter provides instructions on how to install the board to the server system and install the utilities that the board supports.
- **Chapter 3: Software support**
  This chapter tells you how to use the software applications that the server management board supports.
- **Appendix: Troubleshooting**
  The Appendix shows the location of the LAN port for server management and BMC socket on several motherboards. This section also presents common problems that you may encounter when installing or using the server management board.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS websites**
   The ASUS website provides updated information on ASUS hardware and software products. Refer to the ASUS contact information.
2. **Optional documentation**
   Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

Conventions used in this guide

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.



DANGER/WARNING: Information to prevent injury to yourself when trying to complete a task.



CAUTION: Information to prevent damage to the components when trying to complete a task.



IMPORTANT: Instructions that you MUST follow to complete a task.



NOTE: Tips and additional information to help you complete a task.

Typography

Bold text	Indicates a menu or an item to select.
Italics	Used to emphasize a word or a phrase.
<Key>	Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key. Example: <Enter> means that you must press the Enter or Return key.
<Key1+Key2+Key3>	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: <Ctrl+Alt+D>
`Command`	Means that you must type the command exactly as shown, then supply the required item or value enclosed in brackets. Example: At the DOS prompt, type the command line: **`format a:`**

ASMB2 specifications summary

IPMI features	IPMI 2.0-compliant and supports: - Auto monitoring sensor and event logging - IPMI Host I/O interface - Receiving and logging of event messages - IPMB/I^{2}C system interface - System Watchdog Timer (ASR)
CPU	16-bit H8S/2000 core 33 MHz
Chipset	Renesas H8S/2168
Internal RAM	40 KB
Internal ROM	256 KB
Interrupt	I^{2}C, Timer, UART, LPC
Timers	16-bit system timer Watchdog timer
System Interface	Low Pin Count Supports Keyboard Controller Style (KCS)
Serial/Modem Interface	Basic Mode
LAN Interface	IPMI 2.0 Shared LAN
LED	BMC heartbeat
Bus	Two I^{2}C bus One IPMB bus Two UART bus
Features	Remote power on/off Remote BIOS update Short Message Service (SMS) Remote Console Redirection (text mode) Serial-Over-LAN (SOL) Remote reboot Upgradeable firmware Platform Event Trap (PET)
Software support	ASUS Remote Console (ARC) ASUS Host Management Controller Utility (DOS-based)

Specifications are subject to change without notice.

This chapter describes the server management board features and the new technologies it supports.

1 Product introduction

1.1 Welcome!

Thank you for buying an ASUS® ASMB2 server management board!

The ASUS ASMB2 is an Intelligent Platform Management Interface (IPMI) 2.0-compliant board that allows you to monitor, control, and manage a remote server from the local or central server in your local area network (LAN).

The ASMB2 comes with the proprietary ASUS Remote Console (ARC) application that offers round-the-clock remote server monitoring through the component sensors. With ARC, you can monitor the remote server CPU(s) temperature(s), system temperature, fan rotations, and power supply voltages. The ASMB2 records each remote server system event for accurate and efficient troubleshooting.

ARC allows you to update the remote server system BIOS file when it gets outdated or corrupted. It also lets you move through the BIOS file menus using the Remote Console Redirection feature. To keep you always informed of the remote server system status, ARC is also capable of sending Short Message Service (SMS) or text message to your mobile or PDA phone.

The ASMB2 comes with a power management feature that allows you to power on/off or reset the remote server giving you full control during power-critical situations. The server management board also comes with a Field Replaceable Unit (FRU) information feature that gathers information on replaceable system components or modules such as the motherboard or backplane model name, serial number, manufacturer, etc. You can use the FRU information when reporting and/or replacing server system components.

Before you start installing the server management board check the items in your package with the list below.

1.2 Package contents

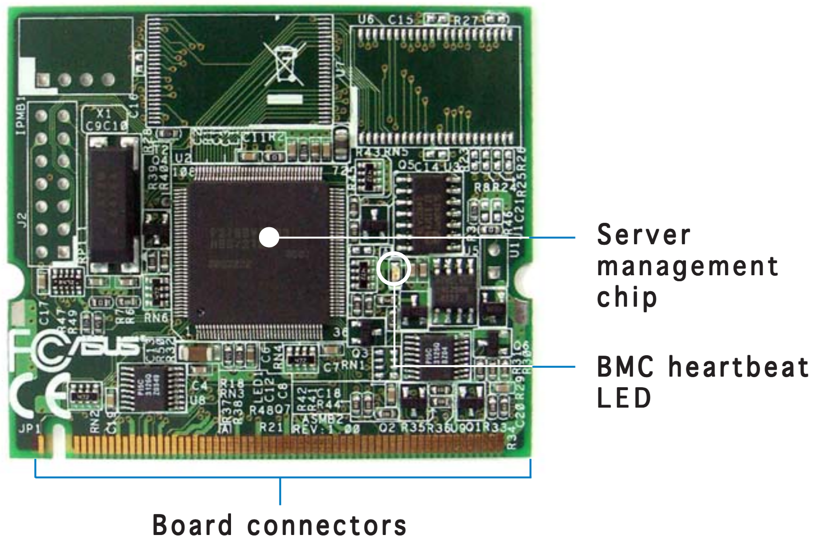
Check your server management board package for the following items.

- ✓ ASUS ASMB2 board
- ✓ Support CD
- ✓ User guide

> If any of the above items is damaged or missing, contact your retailer.

1.3 Board layout

The ASUS ASMB2 comes in a BMC package. The illustration below shows the major components of the server management board.



LED indicators

The ASMB2 board comes with a BMC heartbeat LED. Refer to the table below for the LED indications.

LED	Name	Status	Description
LED1	BMC Heartbeat	Blinking Off	ASMB2 firmware is in execution. The ASMB2 firmware is corrupted or the server system standby-power is off.

1.4 System requirements

Before you install the ASMB2 board, check if the remote server system meets the following requirements:

- ASUS server motherboard with Baseboard Management Controller (BMC) socket*
- LAN (RJ-45) port for server management**
- Microsoft® Internet Explorer 5.5 or later

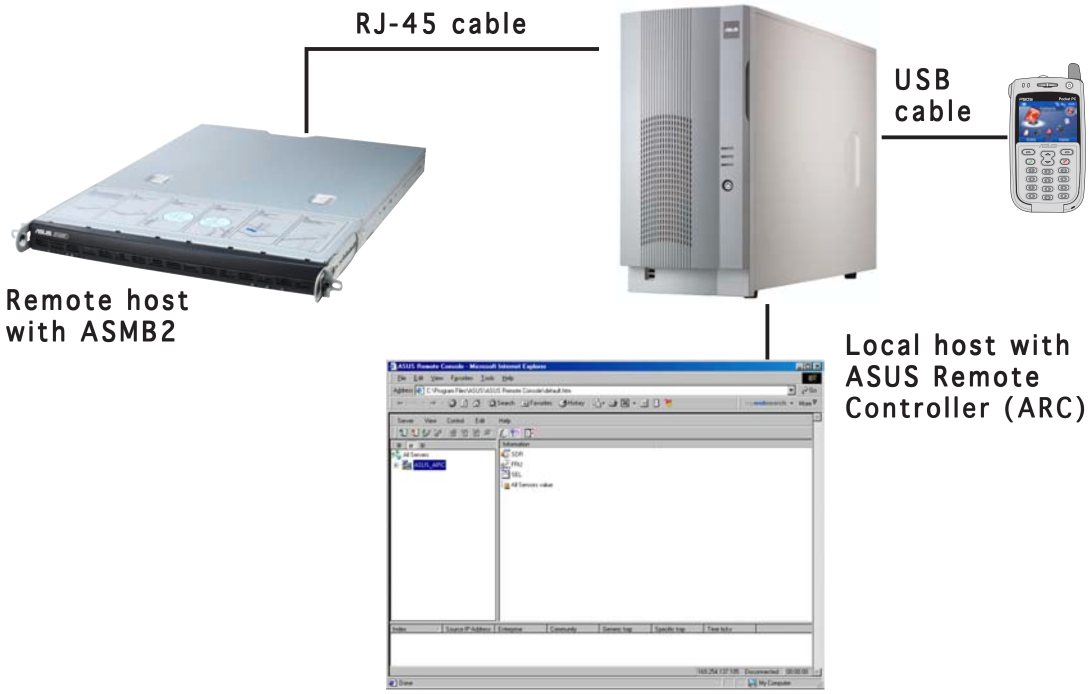
* Visit the ASUS website (www.asus.com) for an updated list of server motherboards that support the ASMB2.

** See the Appendix for details.

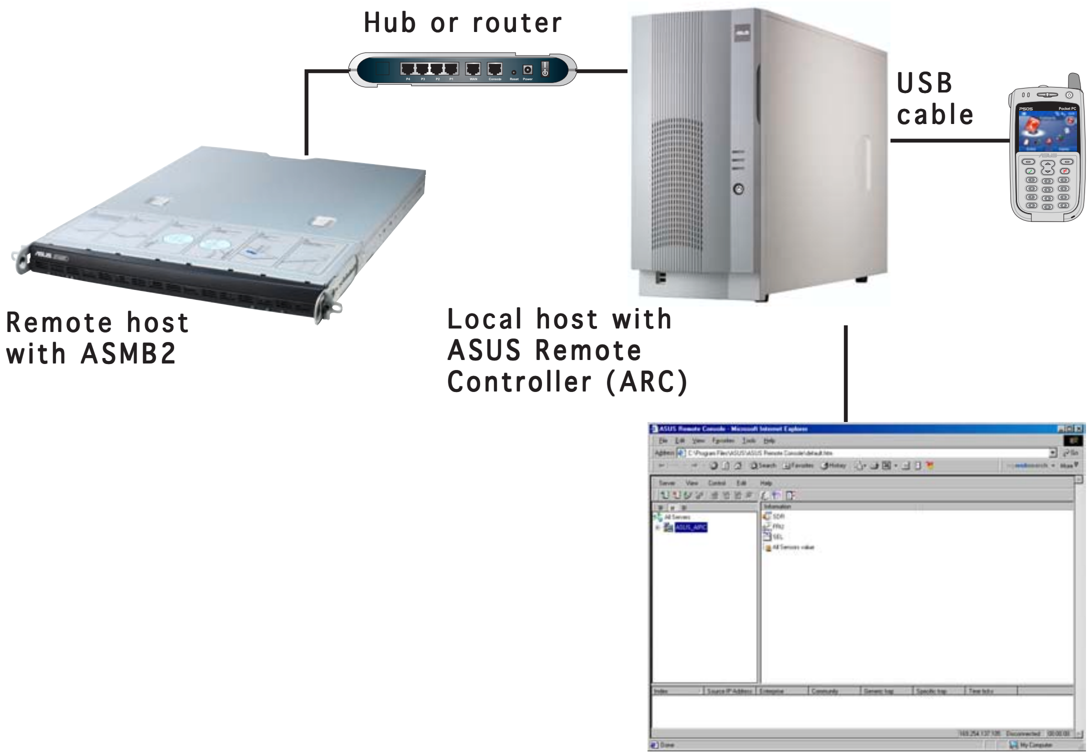
1.5 Network and smart phone setup

The ASMB2 server management board installed on the remote server connects to a local/central server via direct LAN connection or through a network hub. Below are the supported server management configurations.

Direct LAN connection



LAN connection through a network hub



This chapter provides instructions on how to install the board to the server system and install the utilities that the board supports.

Installation 2

2.1 Before you proceed

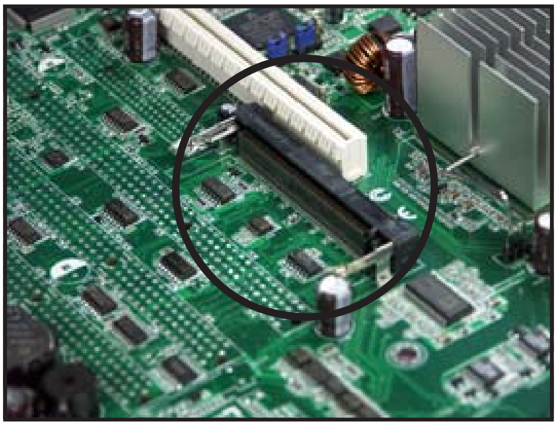
Take note of the following precautions before you install the server management board to the remote server system.

- Unplug the server system power cord from the wall socket before touching any component.
- Use a grounded wrist strap or touch a safely grounded object or to a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity.
- Hold components by the edges to avoid touching the ICs on them.
- Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.
- **Before you install or remove any component, ensure that the power supply is switched off or the power cord is detached from the power supply.** Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

2.2 Hardware installation

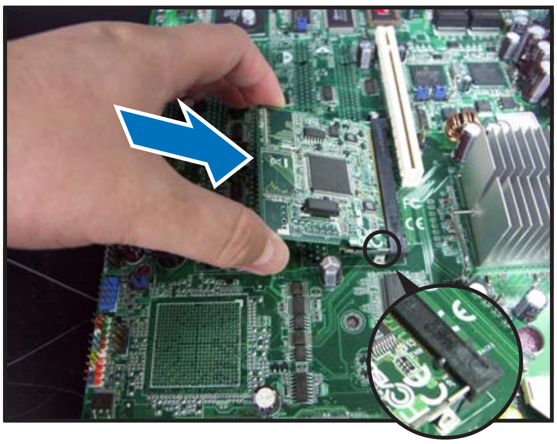
To install the server management board:

1. Remove the remote server system cover, then locate the Baseboard Management Controller (BMC) socket on the motherboard.

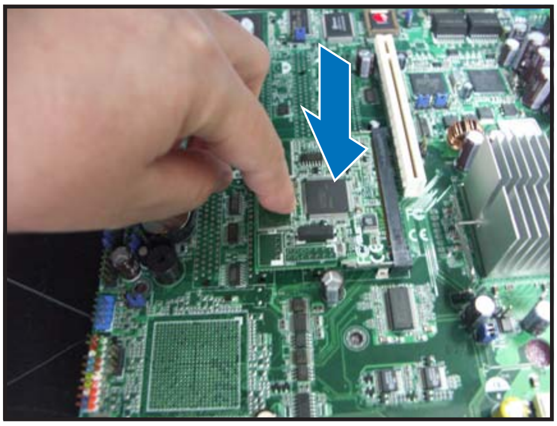


Refer to the Appendix section for the location of the BMC socket on supported motherboards.

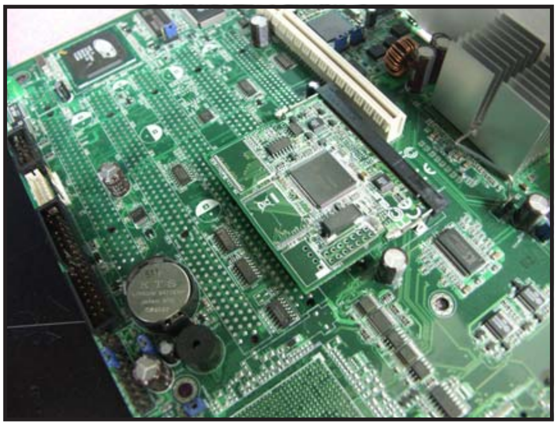
2. Position the board at a 30°-45° angle, then match the notch on the board with the break on the socket.
3. Carefully push the board to the socket until its connectors (golden fingers) are fully-inserted to the socket.



4. Press the board firmly until the BMC socket retaining clips snap back and secure the board in place.



When installed, the board appears as shown.



5. Reinstall the server system cover, then connect the power plug to a grounded wall socket.
6. Insert the LAN cable plug to the LAN port for server management.

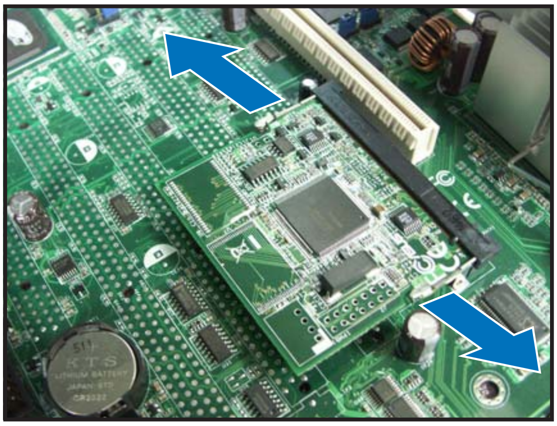
> Refer to the Appendix for the location of the LAN port for server management on various server motherboards.

7. For direct LAN configuration, connect the other end of the LAN cable to the local/central server LAN port.

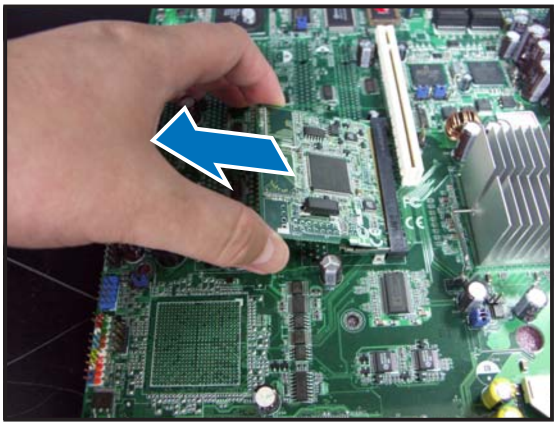
   For connection to a network hub or router, connect the other end of the LAN cable to the network hub or router.

To uninstall the board:

1. Simultaneously push the BMC socket retaining clips outward until the board tilts up.



2. Carefully pull the board out from the BMC socket, then set aside.



2.3 Firmware update

You need to update the Broadcom® IPMI and ASMB2 firmware before you start using the ASMB2 board.

2.3.1 For motherboards without ASF function support

To update the firmware:

1. Insert the support CD into the optical drive.
2. Restart the remote server, then press <Del> during POST to enter the BIOS setup.
3. Go to **Boot** menu and set the Boot Device Priority item to [CD-ROM].
4. When finished, press <F10> to save your changes and exit the BIOS setup.
5. On reboot, the main menu appears. Type **b**.

```
a>    FreeDOS command prompt
b>    Broadcom IPMI Firmware Update
c>    ASMB2 Firmware Update
Please choose a to c:
                    _
```

6. A screen confirming whether or not you want to update the firmware appears. Press <Y> to update; otherwise, press <N>.
7. After the update, the screen goes back to the main menu. Type **c**.
8. A screen confirming whether or not you want to update the firmware appears. Press <Y> to update; otherwise, press <N>.
9. When the update is complete, turn off the system and unplug the AC power cord.

2.3.2 For motherboards with ASF function support

To update the firmware:

1. Follow steps 1 ~ 4 of the previous section.
2. On reboot, the main menu appears. Type **c**.

```
a>    FreeDOS command prompt
b>    Broadcom ASF Firmware Update
c>    Broadcom IPMI Firmware Update
d>    ASMB2 Firmware Update
Please choose a to d:
                    _
```

3. A screen confirming whether or not you want to update the firmware appears. Press <Y> to update; otherwise, press <N>.
4. After the update, the screen goes back to the main menu. Type **d**.
5. A screen confirming whether or not you want to update the firmware appears. Press <Y> to update; otherwise, press <N>.
6. When the update is complete, turn off the system and unplug the AC power cord.

2.4 BIOS remote console

You need to adjust the **Remote Access** settings in the BIOS setup of the remote server for correct configuration and connection to the cental server.

> Update the remote server BIOS file following the instructions in the motherboard/system user guide. Visit the ASUS website (www.asus.com) to download the latest BIOS file for the motherboard.

To adjust the Remote Access settings:

1. Restart the remote server, then press <Del> during POST to access the BIOS setup.
2. Go to the **Server** menu, select the Remote Access Configuration sub-menu, then press <Enter>.
3. Enable **Remote Access**, then set the following sub-menu items:
   - **Serial Port Number** to [COM2]
   - **Baudrate** to [57600]
   - **Terminal Type** to [VT-UTF8]
   - **Media Type** to [Serial]

```
                              BIOS SETUP UTILITY
                  Server
 Configure Remote Access type and parameters     Select Remote Access
                                                 type.
 Remote Access                  [Enabled]

 Serial Port Number             [COM2]
 Baudrate                       [57600]
 Flow Control                   [None]
 Redirection After BIOS POST    [Always]

 Terminal Type                  [VT-UTF8]
 Media Type                     [Serial]

                                                 ←→  Select Screen
                                                 ↑↓  Select Item
                                                 +-  Change Option
                                                 F1  General Help
                                                 F10 Save and Exit
                                                 ESC Exit
            v02.58 (C)Copyright 1985-2004, American Megatrends, Inc.
```

4. Press <Esc>, then select **IPMI Configuration** sub-menu from the **Server** menu.
5. Use this sub-menu to adjust the remote server LAN settings or view the System Event Log (SEL).
6. When finished, press <F10> to save your changes and exit the BIOS setup.

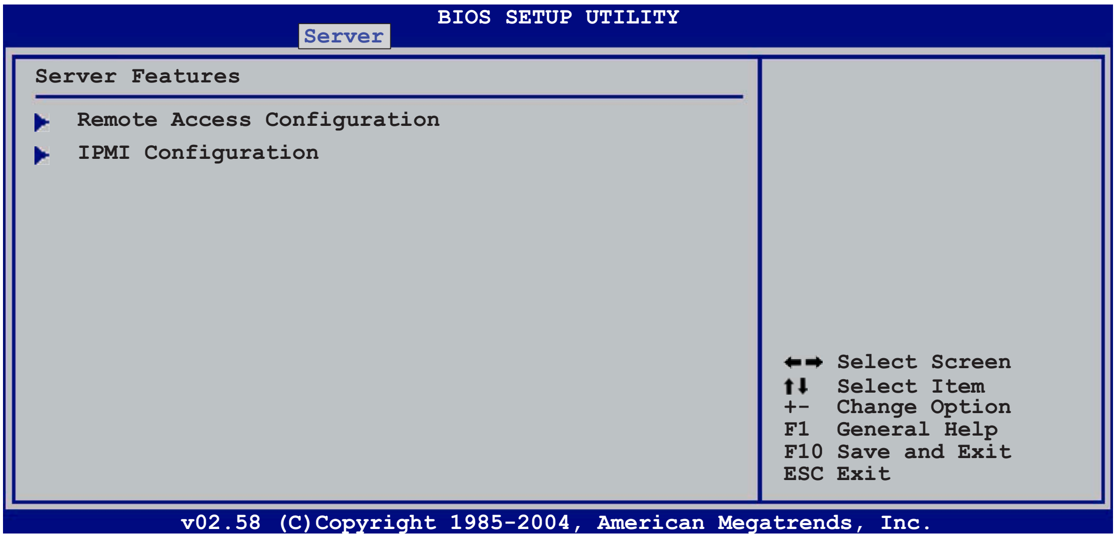
2.5 ASMB2 configuration

You must configure the network settings of both the remote server and the local/central server to establish communication for remote server control and monitoring. Prepare the support CD and a bootable floppy disk to configure the network settings.

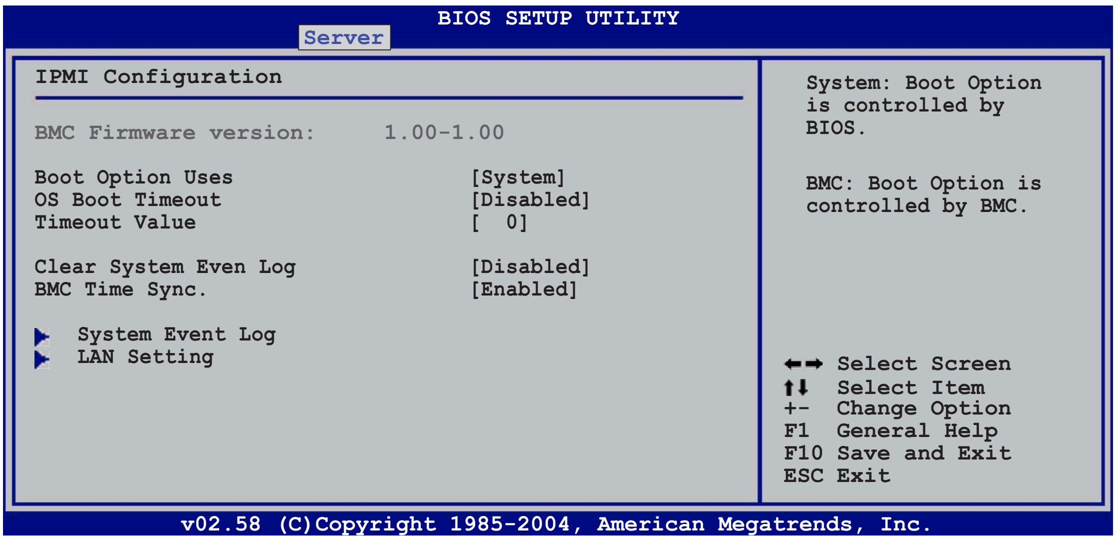
2.5.1 Running the BIOS IPMI configuration

To configure the IPMI in the BIOS:

1. Restart the remote server, then press <Del> during POST to enter the BIOS setup.
2. Go to the **Server** menu, then select the **IPMI Configuration** sub-menu. Use this sub-menu to configure the IPMI settings.
3. When finished, press <F10> to save your changes and exit the BIOS setup.



IPMI Configuration



Boot Option Uses [System]
Set this item to [System] if you want the BIOS to control the boot option. Set to [BMC] if you want the BMC to control the boot option

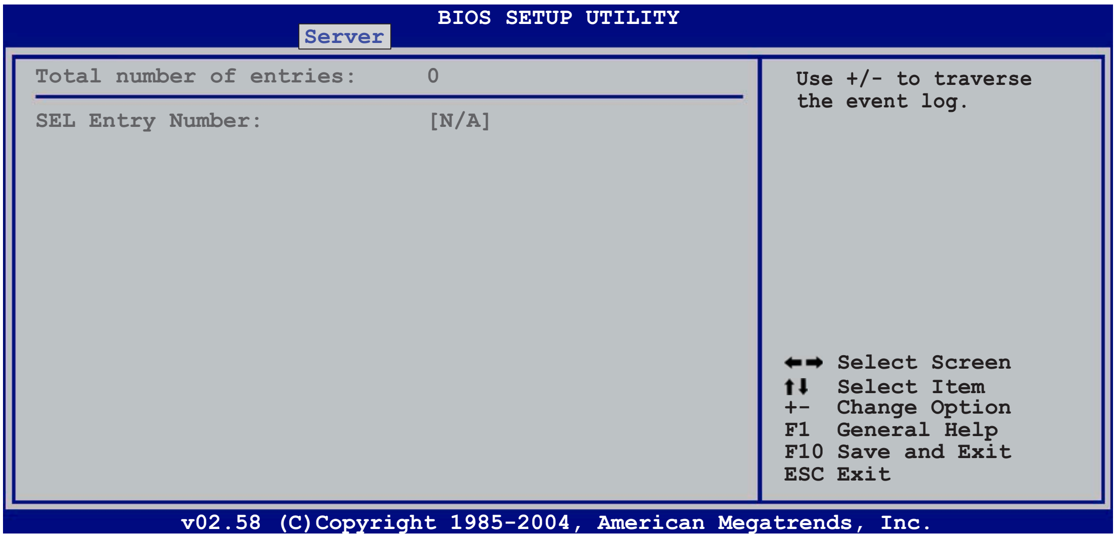
OS Boot Timeout [Disabled]
A systen reset occurs after the specified timeout if the operating system boot fails (does not connect to the Server Manager). Configuration options: [Disabled] [Enabled]

Timeout Value [0]
Allows you to set the operating system boot timeout in minutes. Valid input ranges from 1 to 100 minutes, with 0 signifying that the boot timeout is inactive.

Clear System Even Log [Disabled]
Allows you to clear the system event log.
Configuration options: [Disabled] [Enabled]

BMC Time Sync. [Enabled]
Allows you to synchronize the BIOS time with the BMC time.
Configuration options: [Disabled] [Enabled]

System Event Log
Allows you to view all the events in the BMC event log. It will take a maximum of 15 seconds to read all the BMC SEL records.



LAN Setting

Allows you to set the BMC LAN Parameter settings.

```
                         BIOS SETUP UTILITY
              Server
 Local IP Address                  0.0.0.0        Information to set the
 Subnet Mask                       0.0.0.0        BMC IP address.
 Gateway Address                   0.0.0.0

 Local IP Address                  [  0]
 •                                 [  0]
 •                                 [  0]
 •                                 [  0]

 Subnet Mask                       [  0]
 •                                 [  0]
 •                                 [  0]
 •                                 [  0]
                                                  ←→  Select Screen
 Gateway Address                   [  0]          ↑↓  Select Item
 •                                 [  0]          +-  Change Option
 •                                 [  0]          F1  General Help
 •                                 [  0]          F10 Save and Exit
                                                  ESC Exit
         v02.58 (C)Copyright 1985-2004, American Megatrends, Inc.
```

Local IP Address

Allows you to provide information to set the BMC IP address.

Subnet Mask

Allows you to provide information to set the BMC subnet mask. We recommend that you use the same Subnet Mask you have specified on the operating system network for the used network card.

Gateway Address

Allows you to provide information to set the gateway address. We recommend that you use the same gateway address you have specified on the operating system network for the used network card.

2.5.2 Running the ASMC utility

The ASUS Server Management Card Utility allows you to know the MAC address of the server motherboard and to set the IP address. This utility is available from the support CD that came with the package.

To run the ASMC utility:

1. Restart the remote server, then place the support CD to the optical drive.
2. Press <a> (FreeDOS command prompt) when the screen prompts you to select from available boot options.
3. When the **A:>** prompt appears, type **X:** (where X is the drive letter of the optical drive).
4. When the **X:>** prompt appears, type **cd\asmb2\dos**, then press <Enter>.
5. At the prompt, type **asmc ?**, then press <Enter> to display the ASMC Utility Help Menu. The screen appears as shown.

```
+--------------------------------------------------------+
| ASUS Server Management Card Utility 1.00 Help Menu    |
+--------------------------------------------------------+
Usage:
ASMC -flash -load filename
ASMC -sdr -save filename
ASMC -sdr -load filename
ASMC -kcs[smic/bt/pci_smic] NetFn command data....
ASMC -bmc_ip ip_addr[10.10.10.20]
ASMC -pet_ip_mac ip_addr[10.10.10.20] mac_addr[010203040506]
ASMC -adm_name      new_name_string
ASMC -user_name     new_name_string
ASMC -adm_password  new_adm_password
ASMC -user_password new_user_password
ASMC -init_asmb2
ASMC -sol_baud 57600[9600/19200/38400/57600/115200]
ASMC -bmc_info
```

Refer to the table on the next page for a description of the help menu options.

ASMC Help Menu options

Options	Description
-flash -load filename	Update the ASMB2 firmware
-sdr -save filename	Save the SDR data to file
-sdr -load filename	Update the SDR data from file
-kcs[smic/bt/pci_smic] NetFn command data....	Send IPMI command
-bmc_ip [ip_addr] (e.g., bmc_ip 10.10.10.20)	Write the BMC IP address
--pet_ip_mac [ip_addr] [mac_addr] (e.g., pet_ip_mac 10.10.10.20 010203040506)	Write the PET destination IP and MAC addresses
-adm_name new_name_string	Change the administration name
-user_name new_name_string	Change the user name
-adm_password new_adm_password	Change the administration password
-user_password new_user_password	Change the user password
-init_asmb2	Initialize ASMB2
-sol_baud [baud rate] (e.g., sol_baud 57600)	Set the communication Baud rate
-bmc_info	Displays the BMC and PET IP and MAC addresses

2.5.3 Configuring the LAN controller

Before you can establish connection to the ASMB2 board, you must configure the LAN port for server management used by the remote server to connect to the local/central server.

To configure the LAN port of the remote server:

1. On the prompt, type **asmc -init_asmb2**, then press <Enter>. The screen displays the auto-detected information including the system/ motherboard name, and the IPMI2.0 interface. The screen also shows the status of the ASMB2.

```
c:\dos>asmc -init_asmb2
Detect System          ->  NCL-DE/1U
Detect MotherBoard    -> (NCL-DE/1U)
Detect KCS Interface
Initial BMC O.K.
```

2. Shut down the remote server, then disconnect the power plug from the electrical socket to initialize the ASMB2.
3. Restart the remote server from the support CD.
4. Run the ASMC utility from the support CD following the instructions in the previous section.

5. Type **asmc -bmc_ip xxx.xxx.xxx.xxx**, then press <Enter> to assign any IP address to the remote server LAN port. The screen displays the request and response buffer. Write the remote server IP address in a piece of paper for reference.

```
c:\dos>asmc -bmc_ip 10.10.10.20
Detect System         ->  NCL-DE/1U
Detect MotherBoard    -> (NCL-DE/1U)
Detect KCS Interface
New BMC IP : 10.10.10.20
```

   When finished, the utility returns to the DOS prompt.

> Make sure that the assigned IP address for both remote and local/central servers are in the same subnet. You can use the network settings utility in your OS to check.

6. Type **asmc -bmc_info** on the prompt, then press <Enter> to display the BMC and PET IP and MAC addresses.

```
Firmware Version : 1.04 (NCLV-DS2, NCLV-D2/SATA, NCL-DE/1U, PVL-D/1U)
BMC IP : 10.10.10.10
BMC MAC: 00 E0 18 51 10 7A
PET IP : 00.00.00.00
PET MAC: 00 00 00 00 00 00
SOL BAUD: 57600
```

7. Restart the remote server, enter the BIOS setup, then boot from the hard disk drive.
8. Configure the ASMB2 baud rate (asmc -sol_baud 57600).

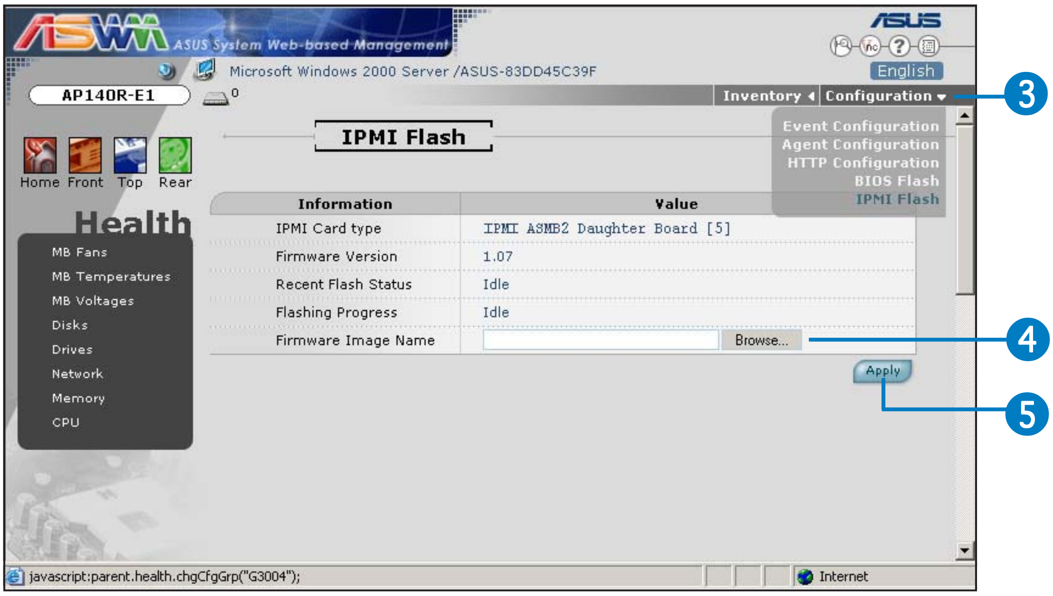
> Make sure that the ASMB2 baud rate is the same as the Remote Access baud rate that you previously set in the BIOS. See section "2.4 BIOS remote console" for details.

9. Adjust the local/central server network settings, if necessary.

2.5.4 Using ASWM to update the ASMB2 firmware

You can use the ASUS System Web-based Management (ASWM) application to update the ASMB2 firmware. To do this:

1. Download the latest ASMB2 firmware from the ASUS website (www.asus.com), then save the firmware file.
2. Launch the ASWM application. If ASWM is not yet installed on your server system, use the motherboard support CD to install the application.
3. Click the **Configuration** link, then select **IPMI Flash** from the menu.



4. Click **Browse** to locate the latest firmware you downloaded earlier. When selected, the firmware path and filename appears in the **Firmware Image Name** field.
5. Click **Apply** to update the ASMB2 firmware.

2.6 Software installation

You can monitor, control, or manage the remote server from the local/central server using the ASUS Remote Console (ARC). The ARC is a web-based application available from the support CD that came with the ASMB2 package. You must install the ARC on the local/central server to access the remote server.

Before you install the ARC:

- For SNMP Service: View the Platform Event Trap (PET) information. See page 3-18 for details.
- For Microsoft® ActiveSync: Enable the SMS feature. See page 3-15 for details.

2.6.1 Installing the ARC

To install the ARC to the local/central server:

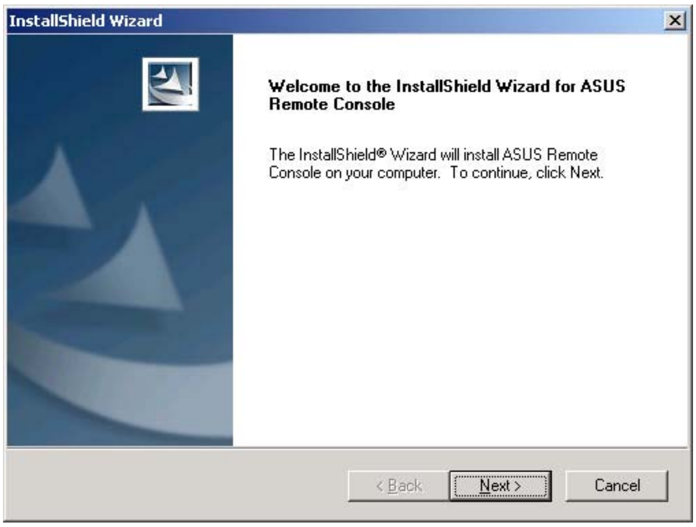
1. Place the support CD to the optical drive. The CD automatically displays the **Drivers** menu if Autorun is enabled in your computer.

If Autorun is NOT enabled in your computer, browse the contents of the support CD to locate the file ASSETUP.EXE from the BIN folder. Double-click the ASSETUP.EXE to run the CD.

2. Click the **Utilities** tab, then click the item **ASUS Remote Console**.

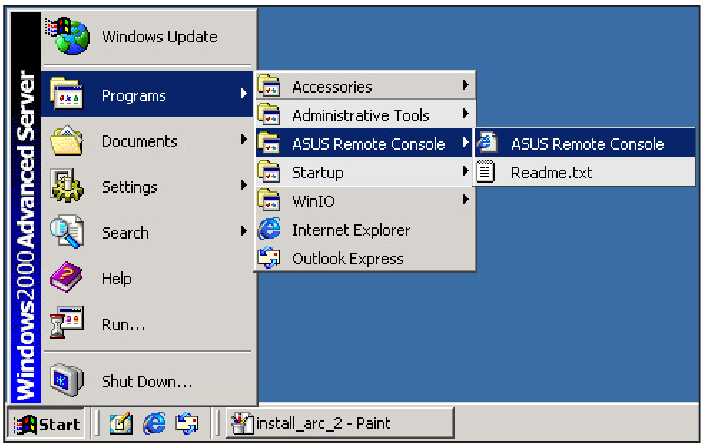


3. Follow the installation wizard instructions to install the utility.



2.6.2 Launching ARC

To launch the ARC utility, click **Start** > **All Programs** > **ASUS Remote Console** > **ASUS Remote Console** from the Windows® desktop.



OR

Double-click the ASUS Remote Console icon on the Windows® desktop.

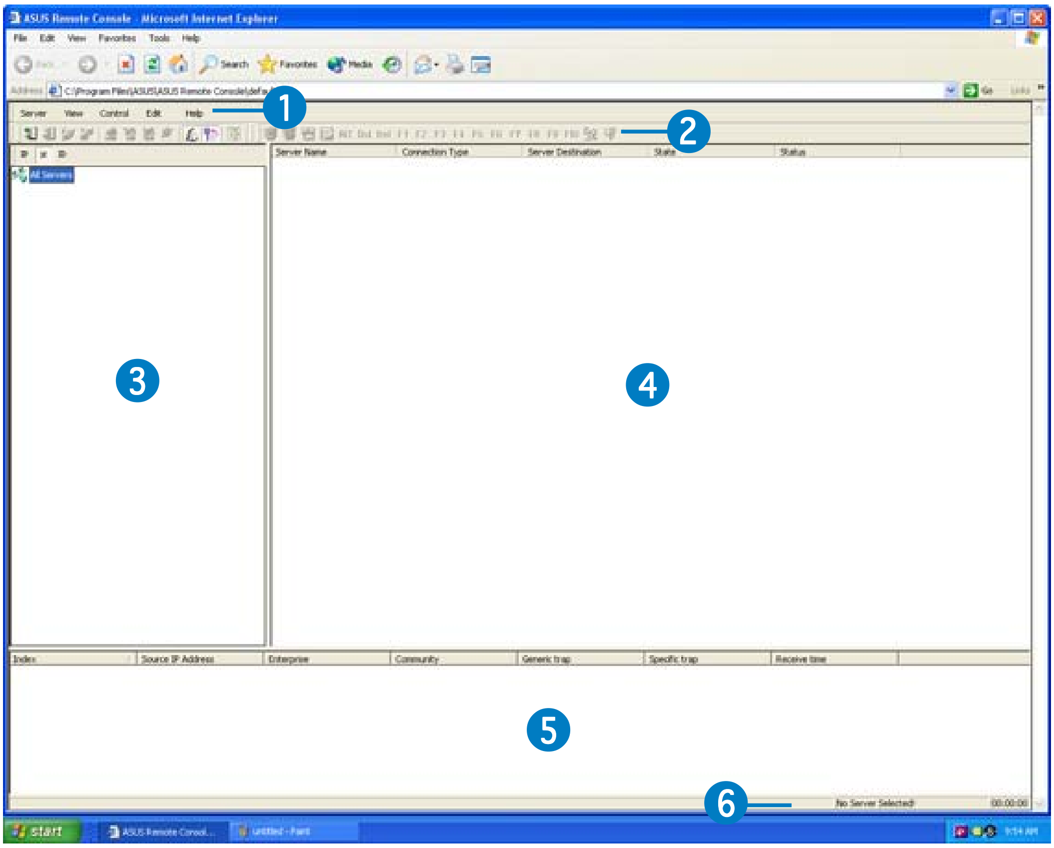


This chapter tells you how to use the software applications that the server management board supports.

3 Software support

3.1 ASUS Remote Console (ARC)

The ASUS Remote Console (ARC) is a web-based utility that allows you to monitor the remote host's hardware information including temperatures, fan rotations, voltages, and power. This application also lets you instantly power on/off or reset the remote server.



The ARC window is made up of six sections:

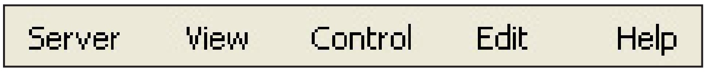
1. **Menu** bar
2. **Tool** bar
3. **Navigation** window
4. **Detail/SEL** window
5. **Event** window, and
6. **Status** bar

Refer to the following sections for details.

3.1.1 ARC sections

Menu bar

The Menu bar contains all the commands for the ARC application. Click on a menu to display a list of available commands.



Menu	Available commands
Server	add, delete, connect, disconnect server or change the server settings
View	show or hide the tool bar, status bar, navigation, and PET windows
Control	power down/up, reset, or power cycle
Edit	delete the System Event Log (SEL), PET log, or Reset PET destination
Help	open Help contents or view information about the ARC application

Tool bar

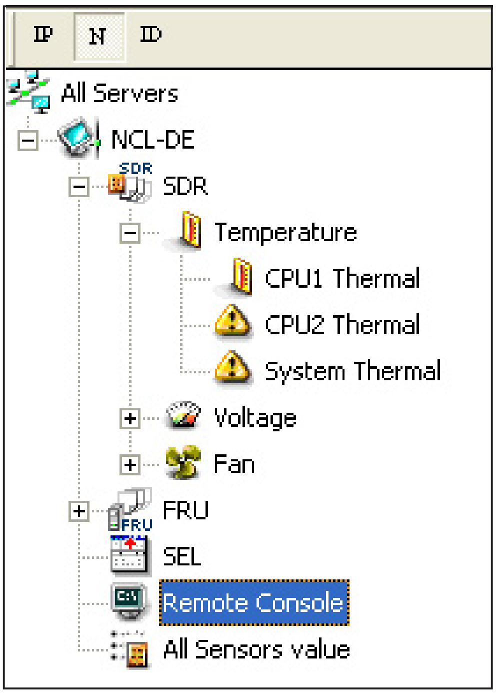
The Tool bar buttons correspond to commonly used commands. The Tool bar offers faster access and execution of these commands. Roll the mouse pointer over a button to display its function.



Navigation window

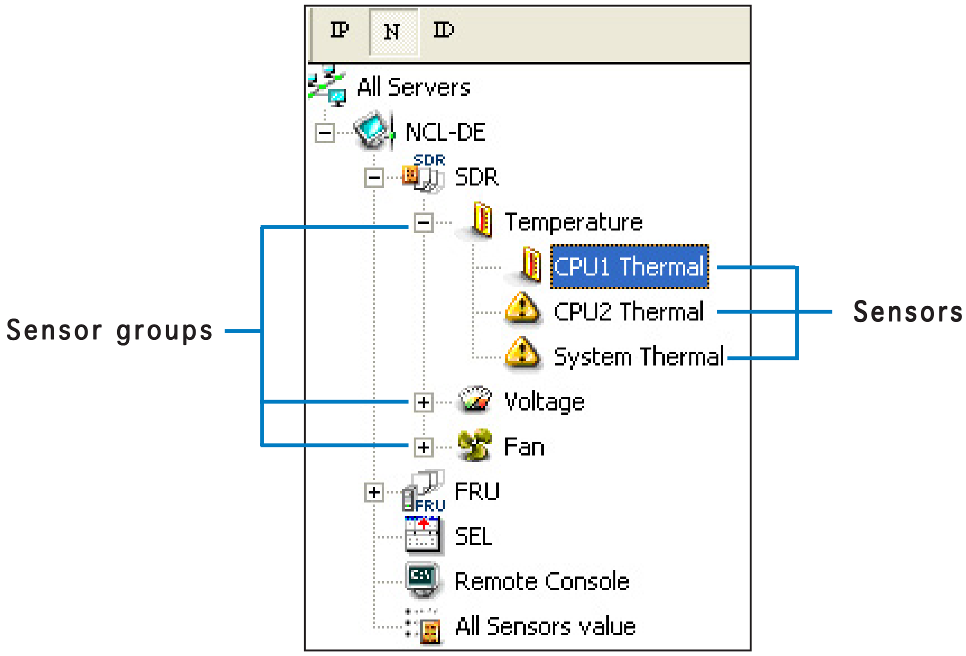
The Navigation window displays the directory of connected and disconnected remote server(s). For multiple monitoring, this window allows you to navigate through the remote servers. Click the **All Servers** root directory to display all connected and disconnected servers, then click on the server you want to monitor or control.

Click ⊞ before the server connection to display available remote server information including the Sensor Data Record (SDR), Field Replaceable Unit (FRU), System Event Log (SEL), and Remote Console.

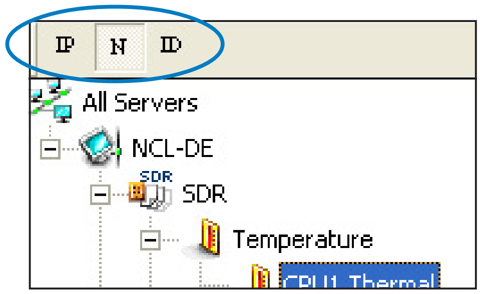


Some remote server information (such as the SDR) contains several sensor groups such as **Temperature**, **Voltage**, and **Fan**. Click ⊞ before the remote server information to display the sensor groups.

Click ⊞ before a sensor group to display individual sensors. For example, clicking ⊞ before the sensor group **Temperature** displays the CPU1 and system temperatures.



You can also change the server directory display by clicking the buttons on top of the window. For example, clicking the **IP** button displays the remote server IP address instead of the remote server name (**N**). Selecting **ID** displays the remote server ID instead of the server name or IP address.



Detail/SEL window

The Detail/SEL window displays the detailed SDR and FRU information, and the System Event Log (SEL). The window provides the link for detailed sensor information or system events and allows you to adjust the sensor threshold values.

Attribute	Value		Meanings
Sensor ID	4	More	
Sensor Name	CPU1 Thermal		
Current Value	0x2E		46.0 degrees C
Theory Value	0x28		40.0 degrees C
Upper non-recoverable Threshold	0x60		96.0 degrees C
Upper critical Threshold	0x58		88.0 degrees C
Upper non-critical Threshold	0x50		80.0 degrees C
Lower non-recoverable Threshold	0x08		8.0 degrees C
Lower critical Threshold	0x10		16.0 degrees C
Lower non-critical Threshold	0x18		24.0 degrees C

Event window

The Event window displays the Platform Event Trap (PET) received by the ARC. The PET information includes the event index, source IP address, enterprise, community, generic and specific traps, and time ticks. The PET information is a system management alert in SNMP Trap format and is used is used for IPMI alerting as well as alerts using the ASF specification.

Index	Source IP Address	Enterprise	Community	Generic trap	Specific trap	Receive time

Status bar

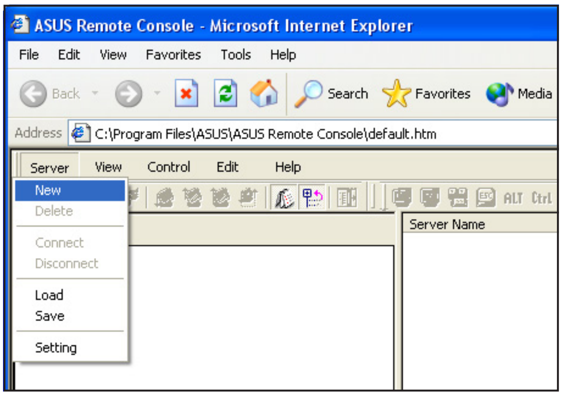
The Status bar located at the bottom of the ARC window displays the connection status to the remote server, connection duration, IP address of the remote server, and the progress of SDR/SEL/FRU information download.



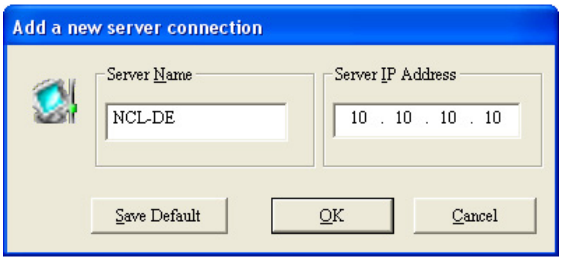
3.1.2 Connecting to the remote server

To connect to the remote server:

1. From the menu bar, click **Server**, then select **New**. An **Add new server connection** window appears.

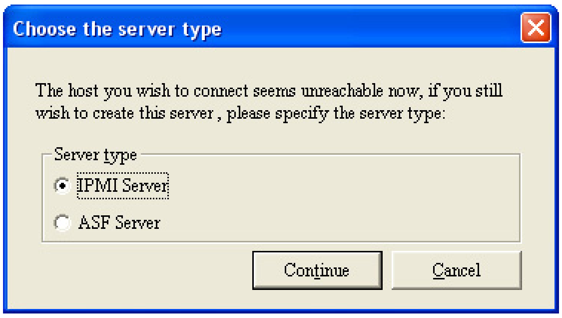


2. Type the remote server name and IP address on the fields. Click **Save Default** to set the remote server connection as the default. Otherwise, click **OK** to continue or **Cancel** to close the window.

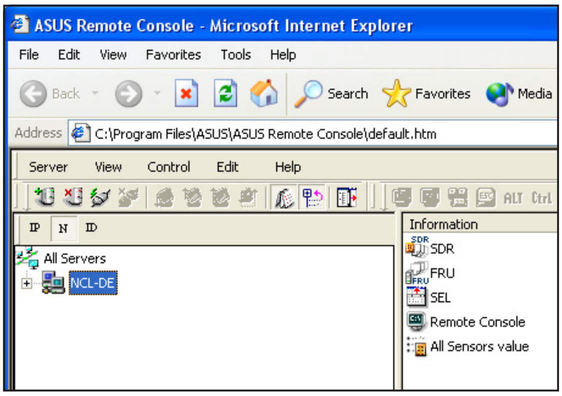


The default server connection name and IP address are automatically displayed everytime you add a new server connection.

3. When prompted, select **IPMI Server**, then click **Continue**.



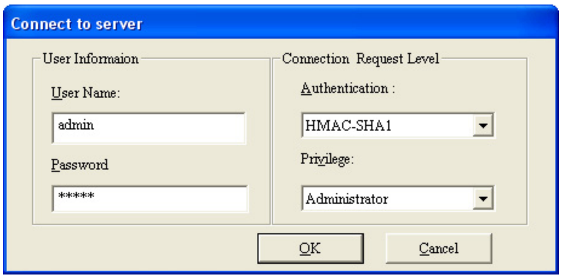
The navigation window displays the remote server. The available remote server information are displayed on the Detail/SEL window.



4. Use any of these options to connect to the server:

- Click ⊞ before the remote server to display the remote server information, then select from the list.
- Double-click a remote server information from the Detail/SEL window.
- Click **Server**, then select **Connect**.

5. When prompted, enter the default user name (admin) and password (admin).
6. Set the connection request level authentication and privilege, then click **OK**.



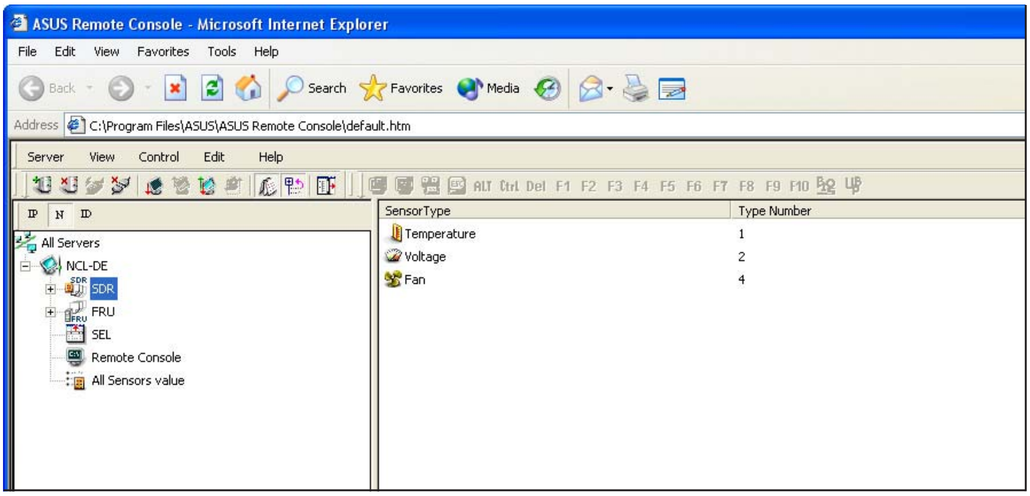
The default connection request level authentication is **HMAC-SHA1** with **Administrator** privileges. You may change these configuration according to your network settings or preference.

3.1.3 Retrieving sensor information

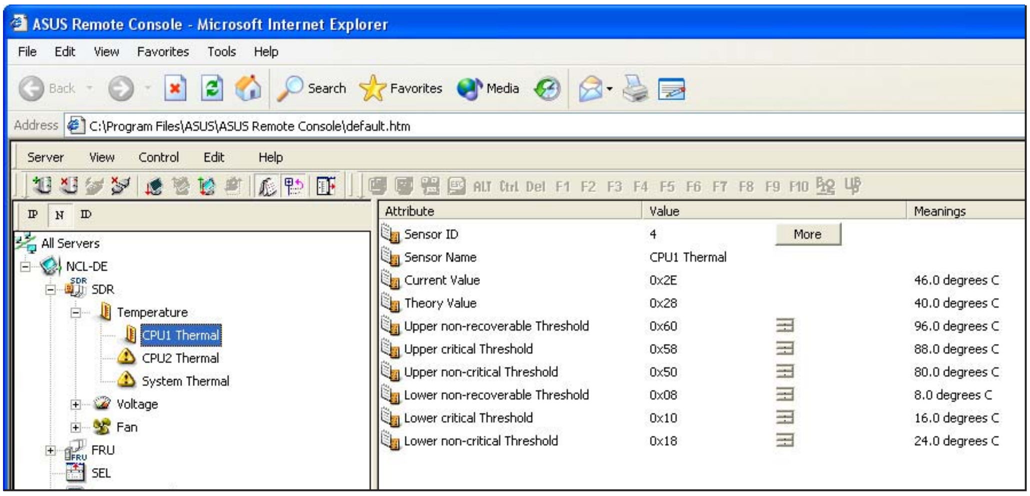
The Sensor Data Record (SDR) provides remote server system information through available sensors including CPU/system/power temperatures, voltages, fan speeds, chassis intrusion, etc. The SDR also provides information on the sensor location (e.g. CPU1, CPU2, FAN1), event generation, and access information.

To retrieve a sensor information:

1. From the navigation window, click ⊞ before the server name to display the remote server information.



2. Click ⊞ before the **SDR** to display the sensor groups (e.g. Temperature), then click ⊞ before a sensor group to display the individual sensors. Select a sensor (e.g. CPU1 THERMAL) to display its values in the Detail/SEL window.

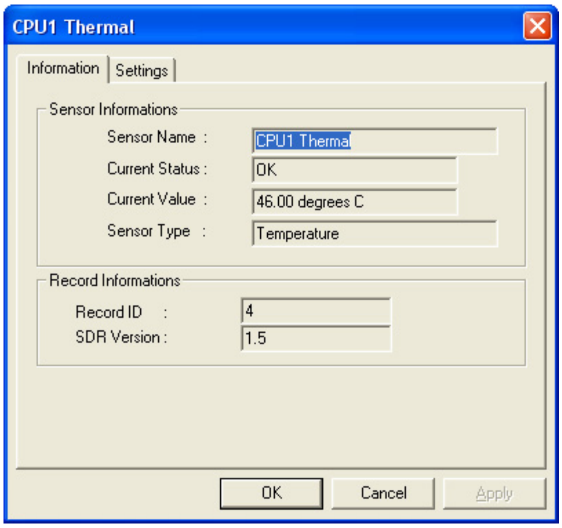


The Detail/SEL window displays the sensor data attributes, values, and meanings. From this window, you can adjust the sensor threshold values by clicking the up/down arrow button after each value.

3. Click **More**. A sensor window appears displaying additional information on the sensor.

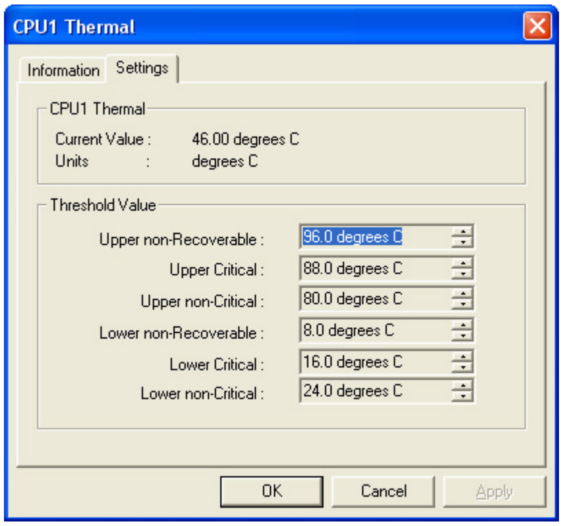
   The **Information** tab displays basic sensor information including the sensor name, current status, current value, and sensor type.

   The tab also displays the sensor record ID and SDR version.



4. Click the **Settings** tab to adjust the sensor threshold values. Click on the up/down arrow button after each threshold value to adjust.

   Click **OK** to close the window.



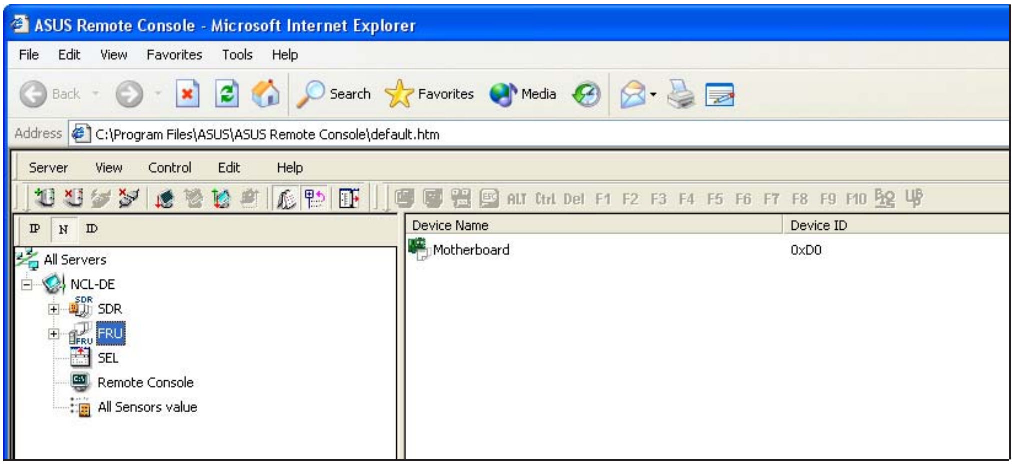
3.1.4 Displaying FRU information

The Field Replaceable Unit (FRU) information provides the manufacturer, product name, and/or serial number of various modules and components installed on the remote server. For example, the FRU feature can display the remote server motherboard name, model, and serial number. You can use this feature when retrieving information on a module or component installed on the remote server.

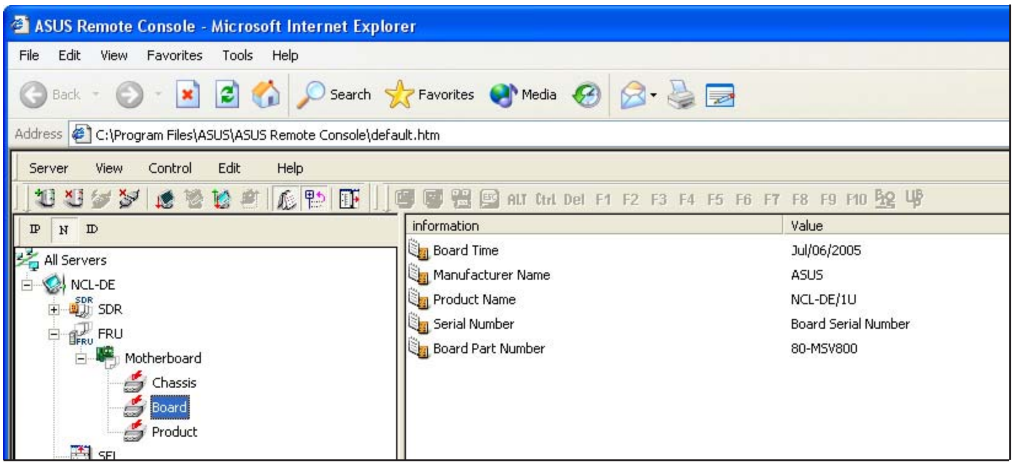
> The FRU information feature allows you to obtain component or module information even when the remote server is down or off.

To display the FRU information:

1. From the navigation window, click ⊞ before the server name to open the remote server information.



2. Click ⊞ before the **FRU** to display available FRU information, then click ⊞ before the module/component. Select a module or component from the list to display the FRU information in the Detail/SEL window.

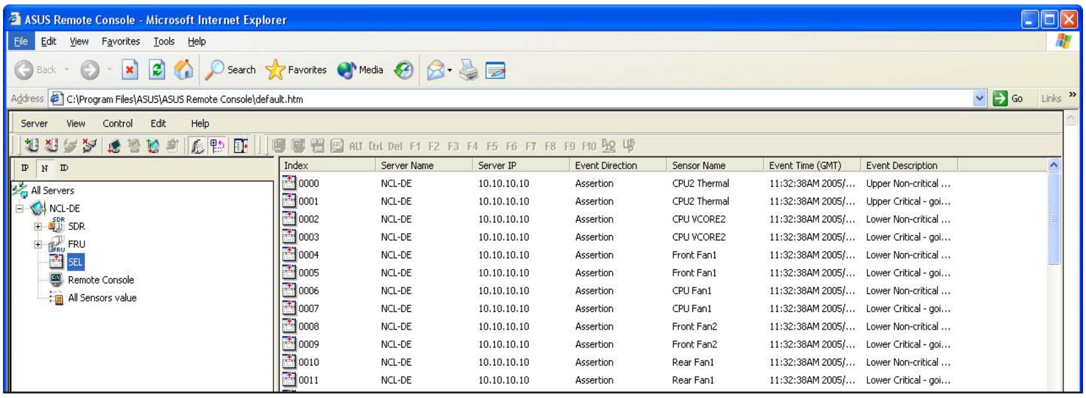


3.1.5 Displaying system event logs

The System Event Log (SEL) is a non-volatile storage area where all remote server system events are stored for real-time tracking or later retrieval. The ARC application can display system events for efficient remote server monitoring and troubleshooting.

To display the sytem events:

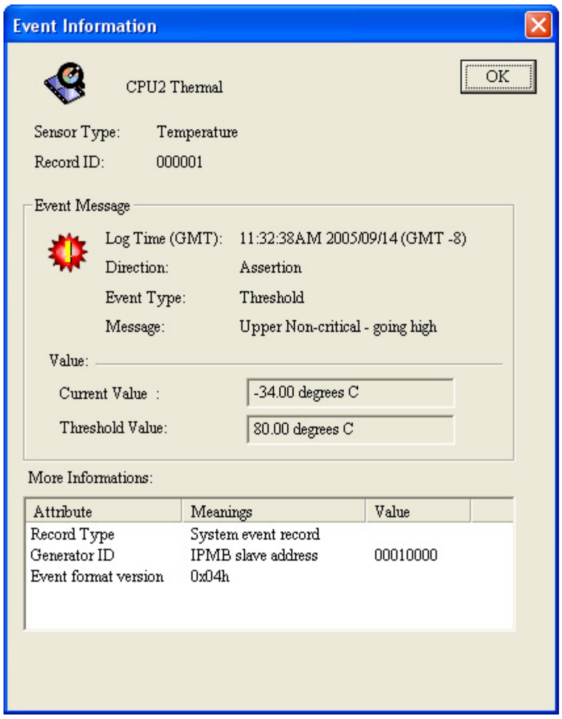
1. From the navigation window, click ⊞ before the server connection, then click **SEL**. The status bar displays the progress of the SEL download. When finished, the Detail/SEL window displays the system events in chronological order.



2. Double-click an event to display an **Event Information** window.

   This window displays the sensor type and record ID, event message, current and threshold values, and other system event information.

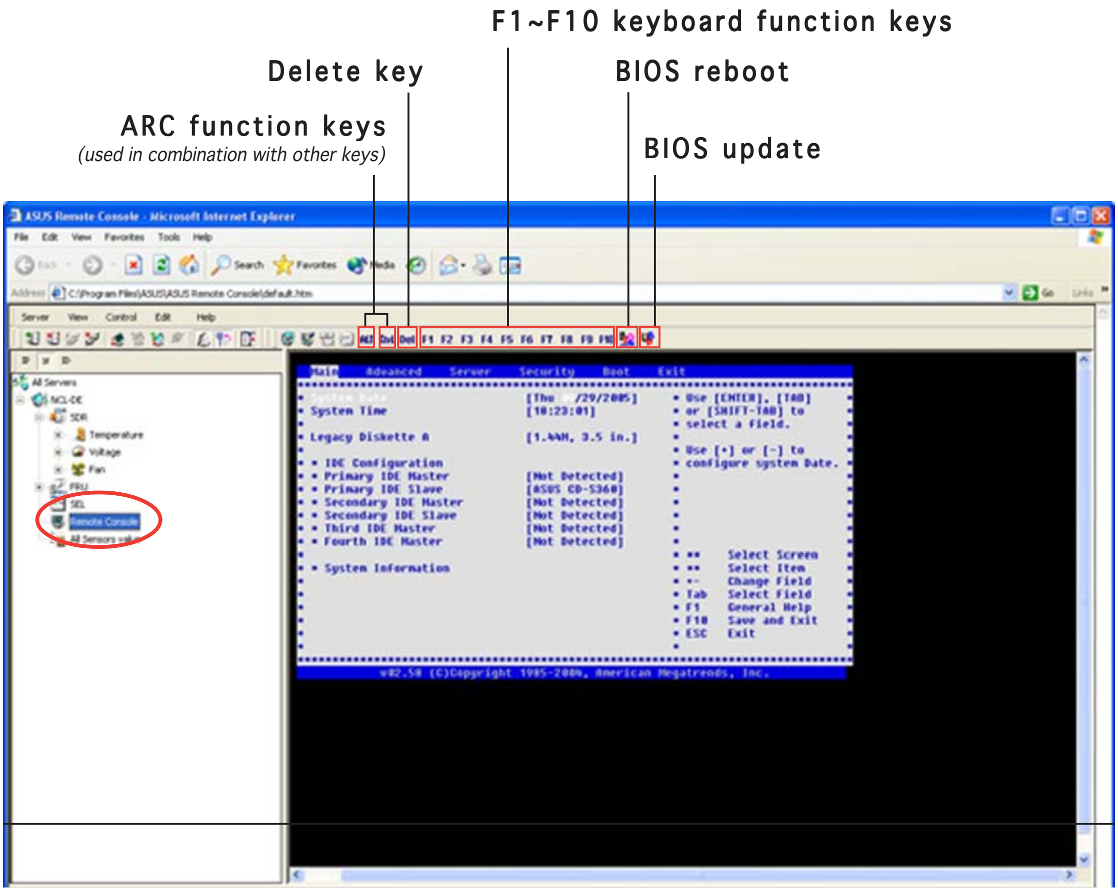
3. Click **OK** to close the window.



3.1.6 Using Remote Console

The Remote Console feature lets you see the remote server screen (text only) and is useful when you update the remote server BIOS file or adjust the BIOS settings. Refer to section "3.1.9 Updating the remote server BIOS file" for details on remote BIOS update.

To display the remote server console, press the **Remote Console** item from the navigation window. The remote server screen appears in the Detail/SEL window.

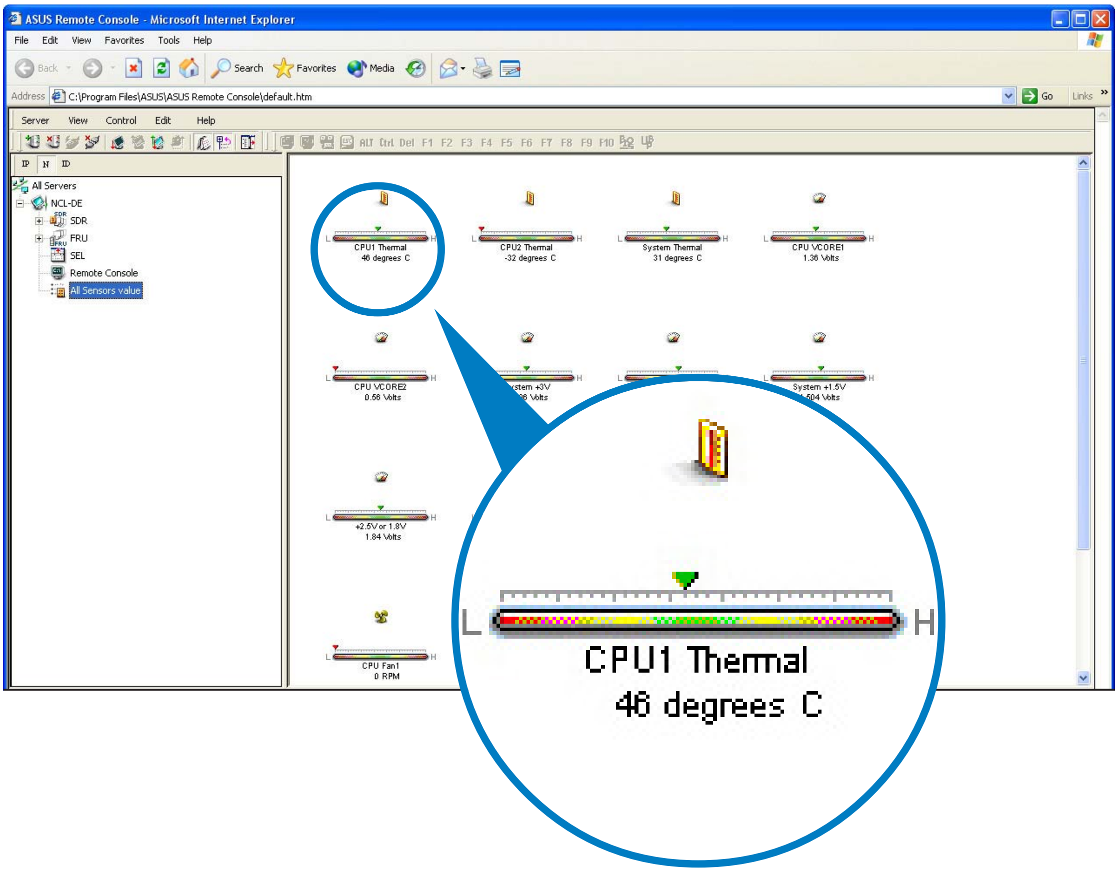


3.1.7 Displaying all remote server sensors

To display all remote server sensors in graphical format:

1. From the navigation window, click ⊞ before the server name to open the remote server information.
2. Click **All Sensors value**. All remote server sensors are displayed on the Information window in graphical format.

   The color bar represents the upper/lower threshold values of each sensor. The green pointer indicates the current value of the sensor.

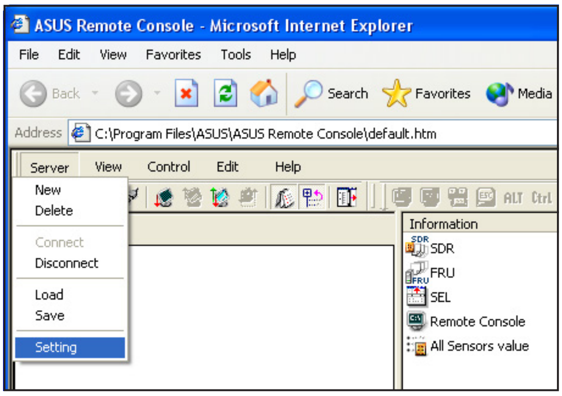


3.1.8 Adjusting the monitoring settings

The ARC application allows you to adjust the remote server monitoring settings including SEL polling, SDR reading, ASF, and PET.

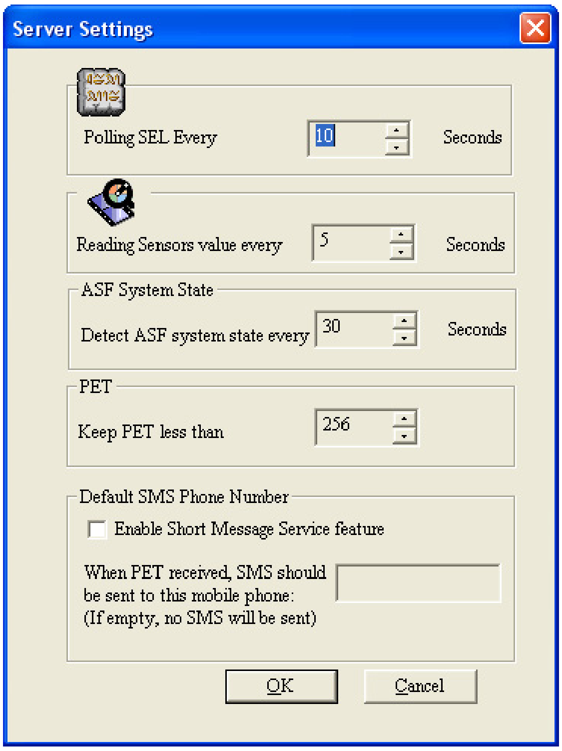
To adjust the monitoring settings:

1. Click **Server** on the menu bar, then select **Setting** from the drop-down menu. A **Server Settings** window appears.



2. Click on the up/down arrow button after each setting to adjust the value.
3. Click **OK** to save your changes and close the window.

   Otherwise, click **Cancel** to ignore your changes.



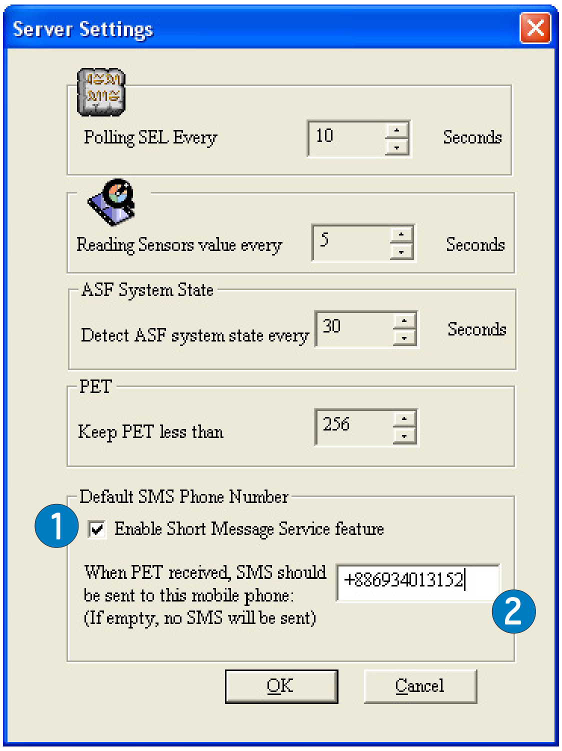
Enabling the Short Message Service (SMS) feature

The Short Message Service or SMS feature allows you to receive Platform Event Trap (PET) information on your smart phone (ASUS P505).

You must install Microsoft® ActiveSync® before you enable the SMS feature. Visit www.microsoft.com to download Microsoft® ActiveSync® .

To enable the SMS feature:

1. Check the box before the **Enable Short Message Service feature**.
2. Key-in the mobile or PDA phone number in the box, then press **OK**.
3. Press **OK** when a confirmation box appears.



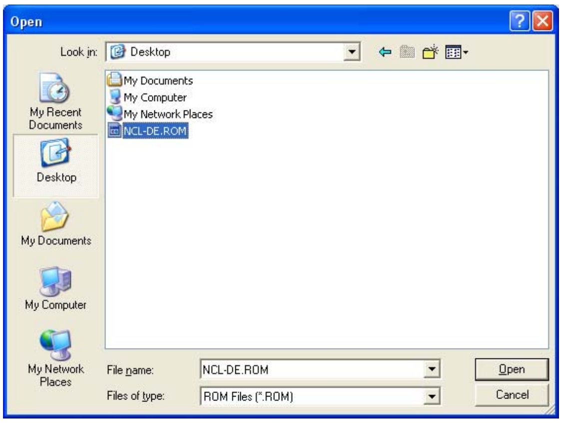
3.1.9 Updating the remote server BIOS file

The ASMB2 features a remote BIOS file update capability that allows you to update the BIOS file of the remote server when the file gets outdated or corrupted.

> Make sure to download and save the latest BIOS file for the remote server motherboard. Visit the ASUS website for the latest BIOS file.

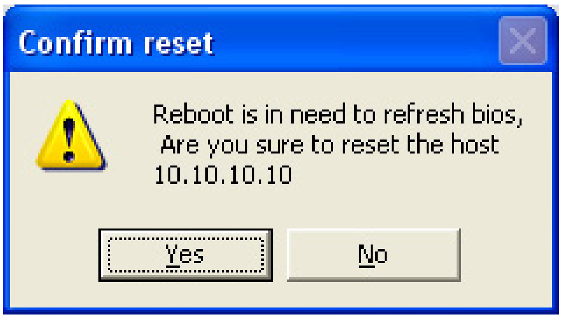
To update the remote server BIOS file:

1. Download and save the latest BIOS file for the remote server motherboard.
2. From the navigation window, click **Remote Console** to display the remote server screen. See section 3.1.6 for details.
3. Click the update BIOS icon [] in the toolbar.
4. Locate the latest BIOS file when the **Open** window appears, the click Open.



5. Click **Yes** when the **Confirm reset** dialog box appears.

   ARC resets the remote server, then automatically updates the BIOS file.
6. When finished, establish connection with the remote server, then use the toolbars to adjust the BIOS setup.



3.1.10 Controlling the remote server power

ARC allows you to power up, power down, or reset the remote server using the power menu.

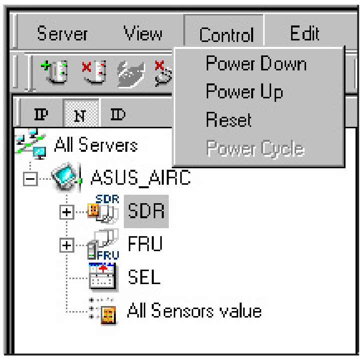
> Before turning off or resetting the remote server, make sure that it is not being used and that no application is currently running on it to avoid data loss.

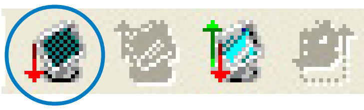
To power down the remote server:

1. Click **Control** on the menu bar, then select **Power down** from the drop-down menu.

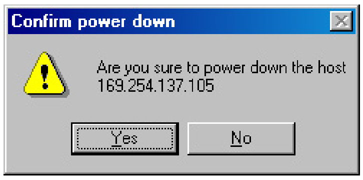
   OR

   Click the power down button on the tool bar.





2. Click **Yes** when the **Confirm power down** window appears.



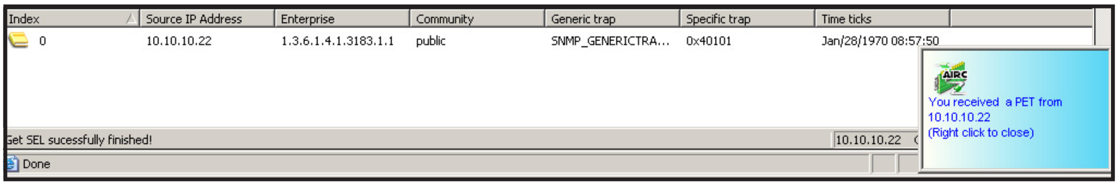
3. The remote server is turned off. Click **OK** to close the window.

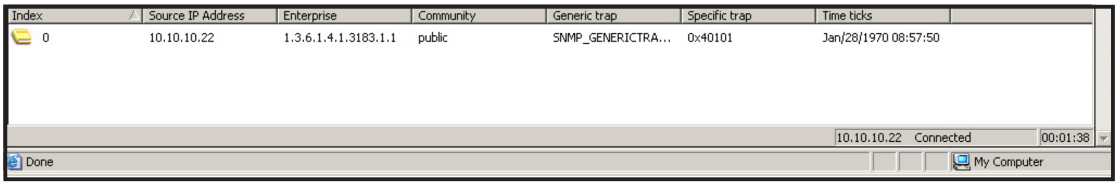
   Use the same instructions as reference when powering up or resetting the remote server.



3.1.11 Viewing PET information

The Platform Event Trap or PET is an SNMP trap used for system management alerts. When the ARC receives a PET, it displays a pop-up window notifying you of the alert and its source (IP address). Right-click the window to close.

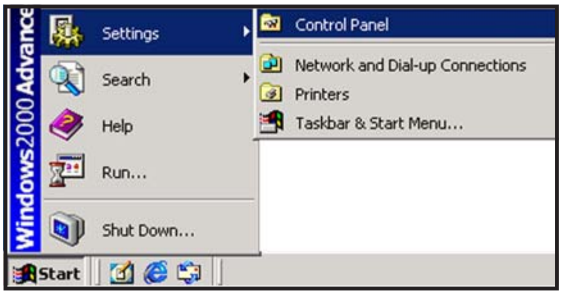




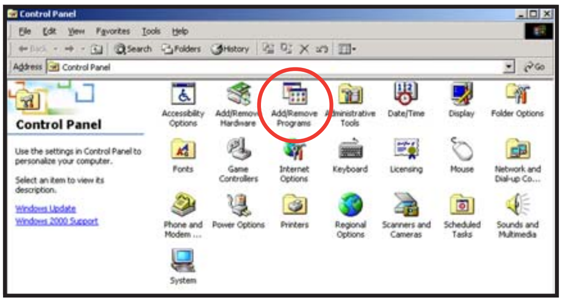
You need to install an SNMP service to the remote server to receive PET information.

To install an SNMP service to the remote service:

1. On the Windows® taskbar, click **Start** > **Settings** > **Control Panel.**



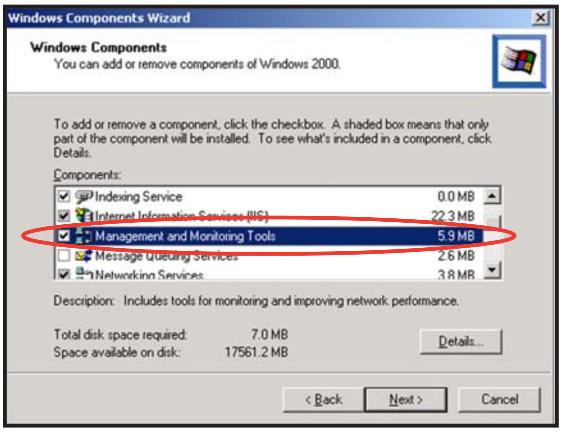
2. Double-click **Add/Remove Programs.**



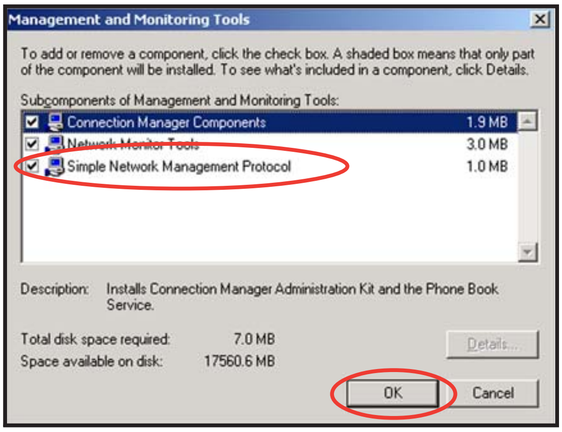
3. Double-click **Add Windows Components.**



4. Double-click **Management and Monitoring Tools.**



5. Select **Simple Network Management Protocol (SNMP).**
6. Click **OK.**



Important notice for Windows® XP (Service Pack 2) users

If the remote server system is behind a firewall, you must create a UDP port to receive PET information.

To create a UDP port:

1. Double-click the **My Computer** icon from the Windows® desktop, then click the **My Network Places** link.
2. Click the **View network connections** link, then select the LAN connection the remote server system is using.
3. Right-click the LAN connection, then select **Properties** from the drop-down menu.
4. Click the **Advanced** tab, then click the **Settings** button.
5. On the **Services** tab, click the **Add** button to display a **Service Settings** window.
6. Type a name on the **Description of service field** (i.e. ASUS ARC).
7. Type the IP address of the local/central server, then set the **External** and **Internal Port number** to **162**.
8. Select **UDP**, then click **OK**. The created service is displayed in the Services list. Check the box before the service, then click **OK**.

You must also adjust the Internet Explorer settings to allow active contents to run in the local/central server. To do this:

1. From the **Internet Explorer** menu, click **Tools**, then select **Internet Options** from the drop-down menu.
2. Click the **Advanced** tab.
3. Enable the item "**Allow active content to run in files on My Computer**".
4. Click the **Apply** button, then click **OK** to close the window.

3.2 ASUS Host Management Controller Setup

The ASUS Host Management Controller Setup utility provides precise configuration and basic functions including System Event Log (SEL) generation and System Data Record (SDR) reading in DOS mode.

This utility also supplies configuration sequences for the type of host interface as well as direct real-time monitoring of system information including CPU temperature(s), fan speeds and system voltages.

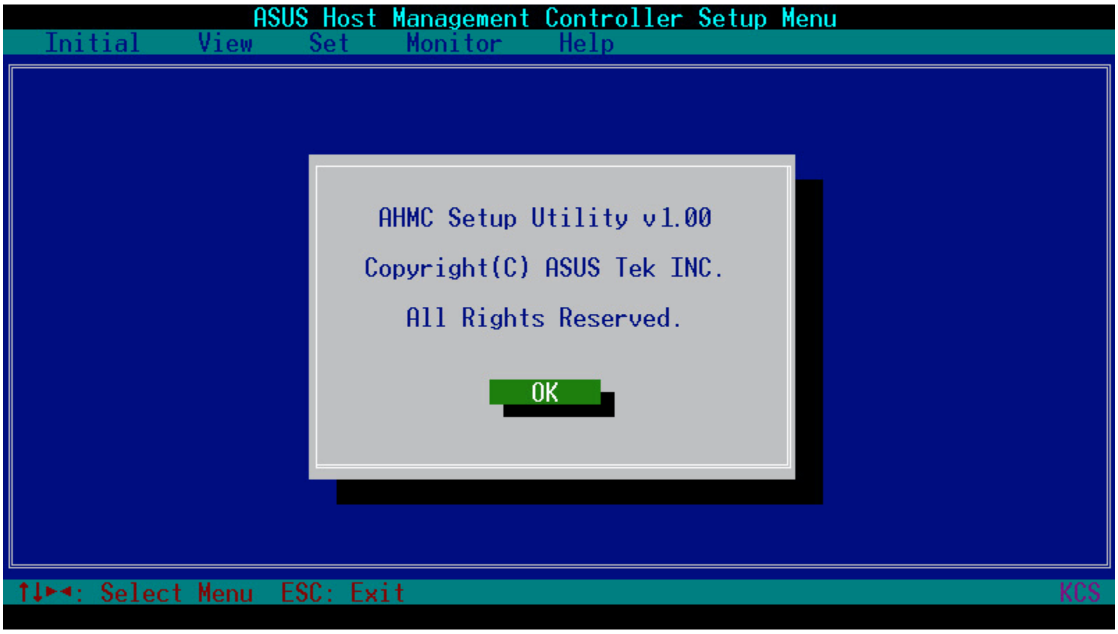
3.2.1 Installing and launching the ASUS Host Management Controller Setup utility

To install the ASUS Host Management Controller Setup utility:

1. Boot the server in DOS mode using the support CD.
2. When the **A:>** prompt appears, type **X:** (where X is the drive letter of the optical drive).
3. When the **X:>** prompt appears, type **cd\asmb2\dos**, then press <Enter>.
4. At the prompt, type **asmc**, then press <Enter> to display the ASMC Utility Help Menu. The screen appears as shown.

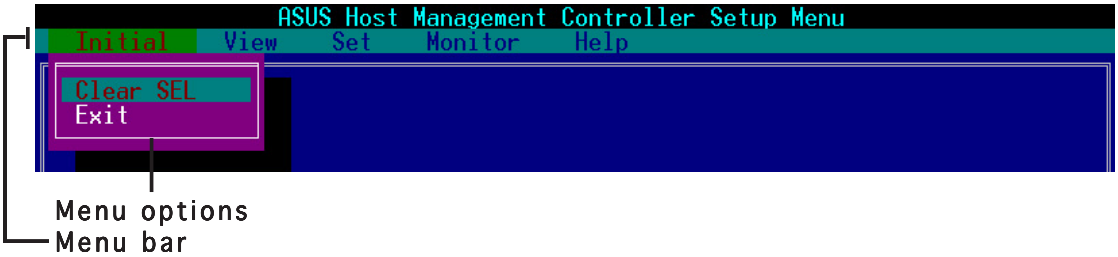
```
A:\>x:
X:\>cd\asmb2\dos
X:\>asmc
```

5. The main utility screen appears. Press <Enter>.



3.2.2 Command fields

The utility menu bar has five commands: Initial, View, Set, Monitor and Help. You can select a command using the left or right arrow button on the keyboard. After selecting a command, use the down arrow key to display available options. Select a command, then press <Enter> to execute.

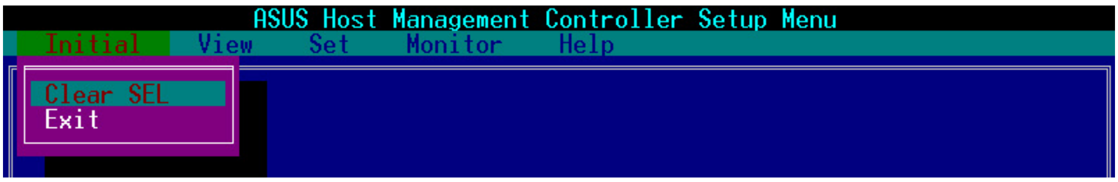


3.2.3 Initial

The Initial command allows you to clear the SEL information or exit the utility.

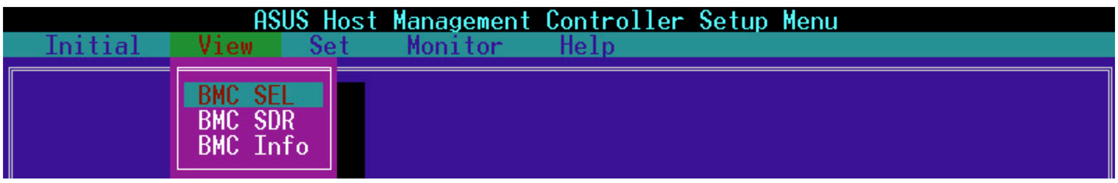
Go to **Initial** command, then select **Clear SEL** to empty all System Event Log information for a refresh set of data records. Use the **Clear SEL** command when creating a new log that begins at an exact time for precise system monitoring.

Select **Exit** to close the utility and return to the DOS prompt.



3.2.4 View

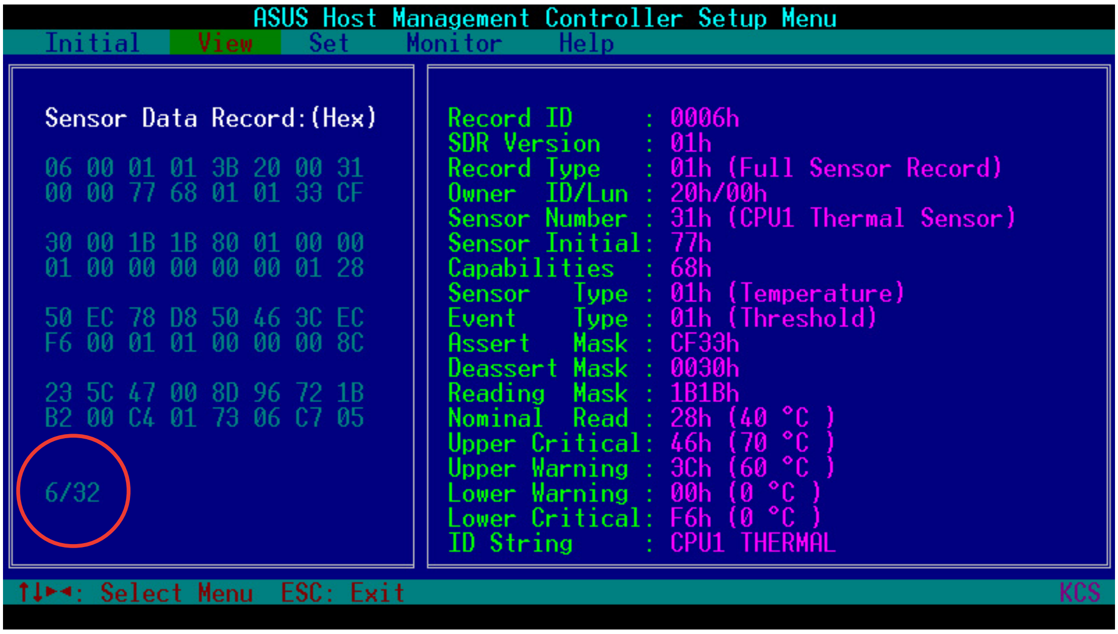
The **View** command displays the Baseboard Management Controller (BMC) data record including the **System Event Log** (SEL), the **System Data Record** (SDR), and general BMC information.



To view the System Data Record (SDR):

1. Select **BMC SDR** from the **View** command option, then press <Enter>. A complete list of data records appears on the left pane. The right pane displays the sensor data information.

   The number on the bottom left of the screen indicates the data record displayed in the right window pane over the total number of sensor data records in the remote host.



2. Use the down arrow key to display the next sensor data record.
3. Press <Esc> to return to the main screen.

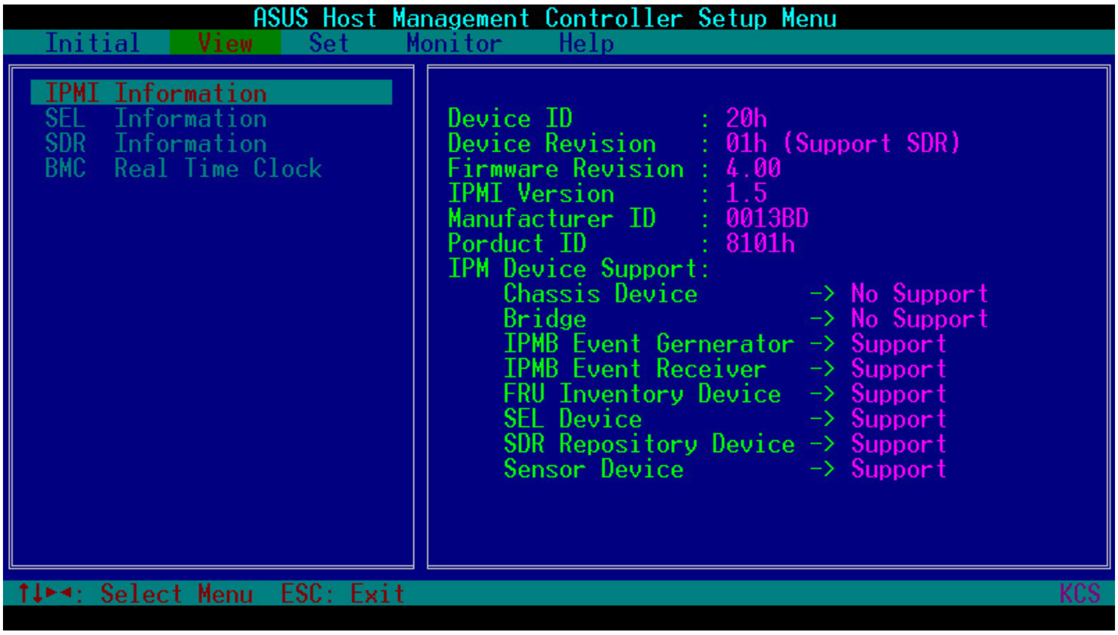
To view the System Event Log (SEL):

1. Select **BMC SDR** from the **View** command option, then press <Enter>. A complete list of system event records appear on the left pane. The right pane displayes the SEL information.

   The number on the left bottom of the window shows the system event displayed in the right window pane over the total number of system events in the remote host.
2. Use the down arrow key to display the next sensor event.
3. Press <Esc> to return to the main screen.

To view the BMC information:

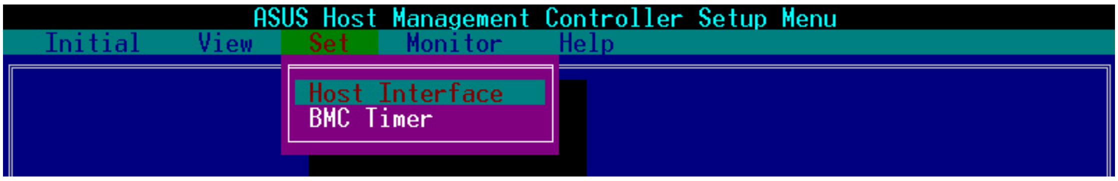
1. Select **BMC Info** from the **View** command option, then press <Enter>. A list of BMC information appears on the left pane.
2. Use the down arrow button to select a BMC information. The BMC information is displayed in the right pane.



3. Press <Esc> to return to the main screen.

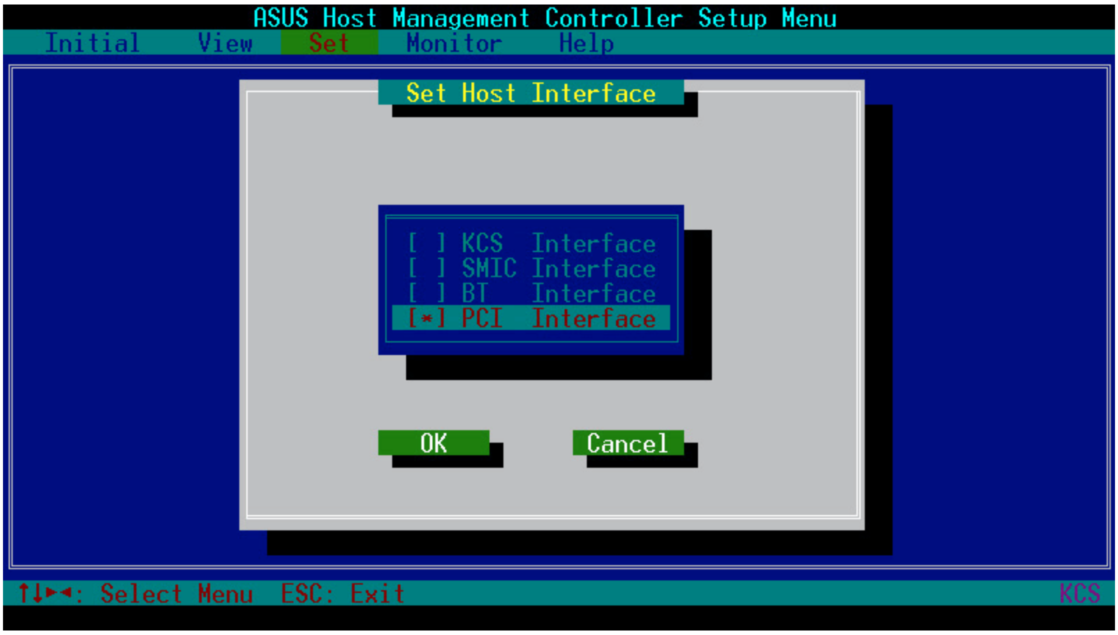
3.2.5 Set

The **Set** command controls the host interface type and the correct BMC time.



To select the host interface:

1. Select **Host Interface** from the **Set** command option, then press <Enter>. The screen displays the host interfaces supported by the server management board.
2. Use the down arrow button to select a host interface, then press <Enter>.



You can select from the following interfaces:

KCS Interface - Keyboard Controller Style
SMIC Interface - Server Management Interface Chip
BF Interface - Block Transfer
PCI Interface - Peripheral Component Interconnect

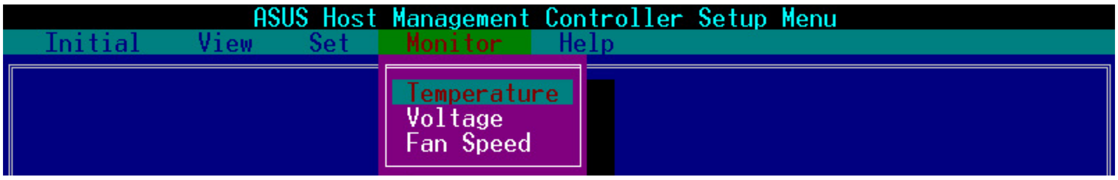
3. When finished, press <Esc> to return to the main screen.

To set the BMC Timer:

1. Select **BMC Timer** from the **Set** command option, then press <Enter>.
2. Set the BMC IPMI timer to the current system time.
3. When finished, press <Esc> to return to the main screen.

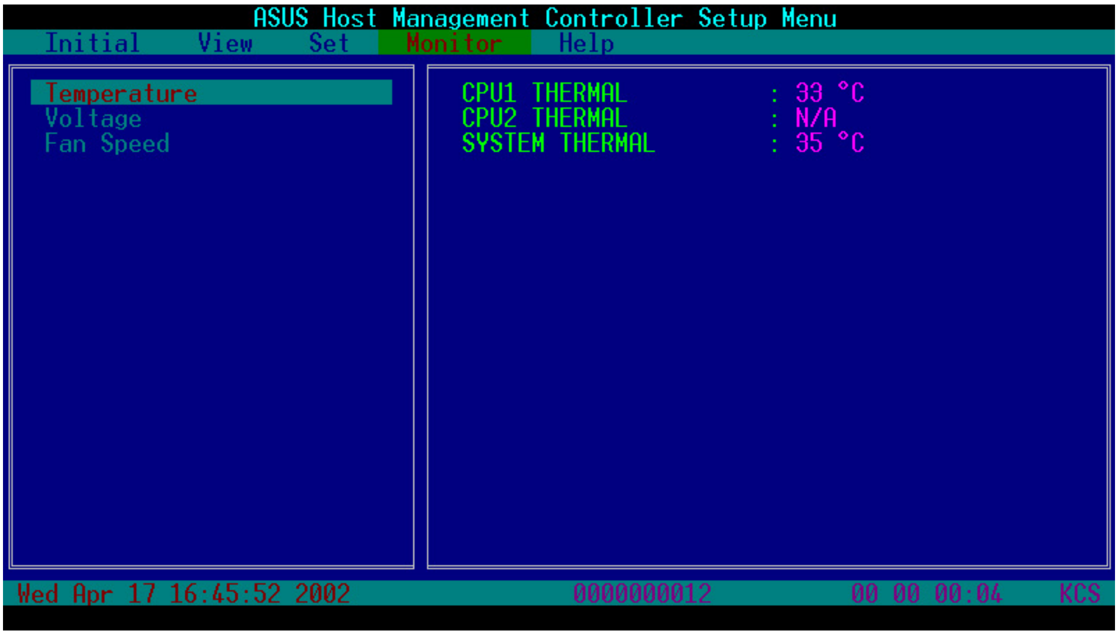
3.2.6 Monitor

The **Monitor** command displays real-time data on the remote server system and CPU temperatures, voltages, and fan speeds.



To display a remote server information:

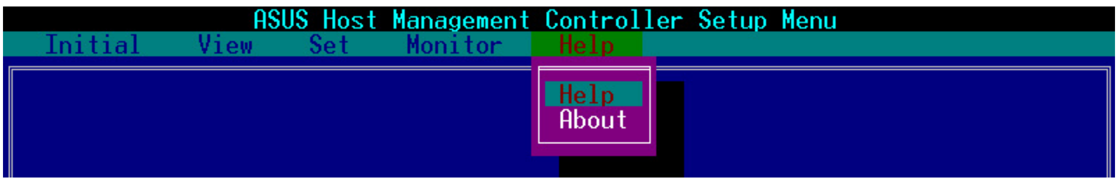
1. Select a sensor from the **Monitor** command options, then press <Enter>. A list of server information appears on the left pane.
2. Use the down arrow button to select a monitor information. The selected monitor information details are displayed in the right pane.



3. Press <Esc> to return to the main screen.

3.2.7 Help

The **Help** command displays the available utility options, utility version, and copyright information.



The Appendix shows the location of the LAN port for server management and BMC socket on several motherboards. This section also presents common problems that you may encounter when installing or using the server management board.

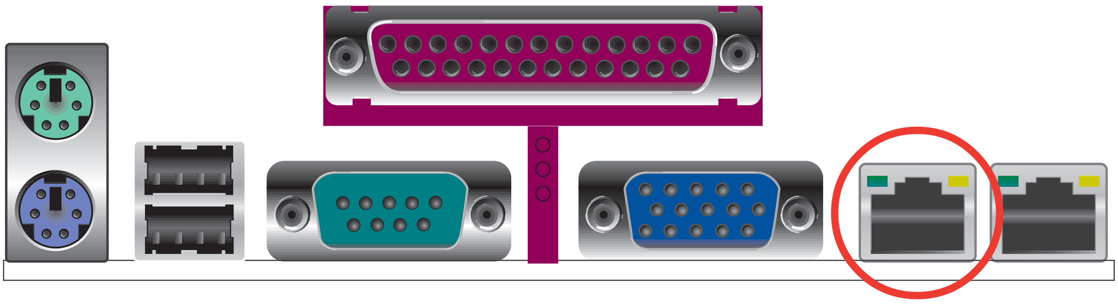
A Reference information

A.1 LAN port for server management

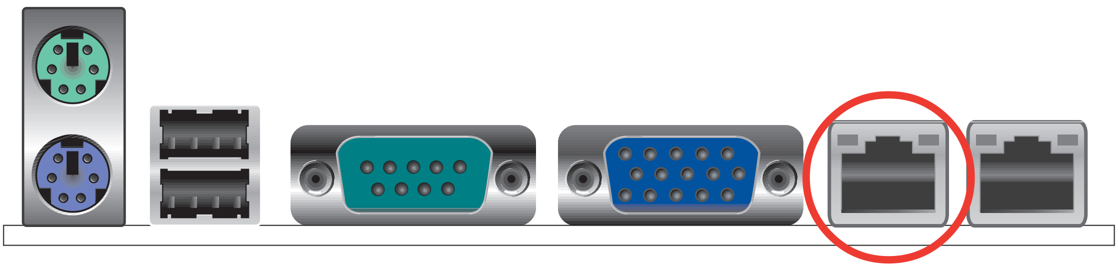
The ASUS server motherboards that support the ASMB2 comes with two LAN (RJ-45) ports: one for network connection and the other for server management. For easy identification, the LAN port for server management is the LAN port near the VGA port. You must use the LAN port for server management to connect the remote server to the local/central host (direct LAN connection) or to the network hub or router.

Refer to the illustrations below to identify the LAN port for server management on some server motherboards.

NCL-DE/1U and NCL-DE/SCSI motherboard



K8N-DRE motherboard

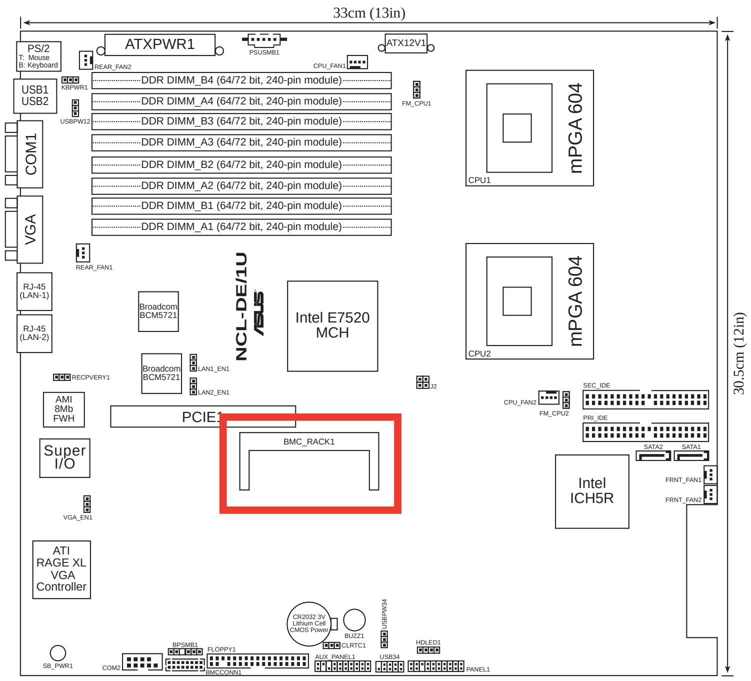


A.2 BMC socket

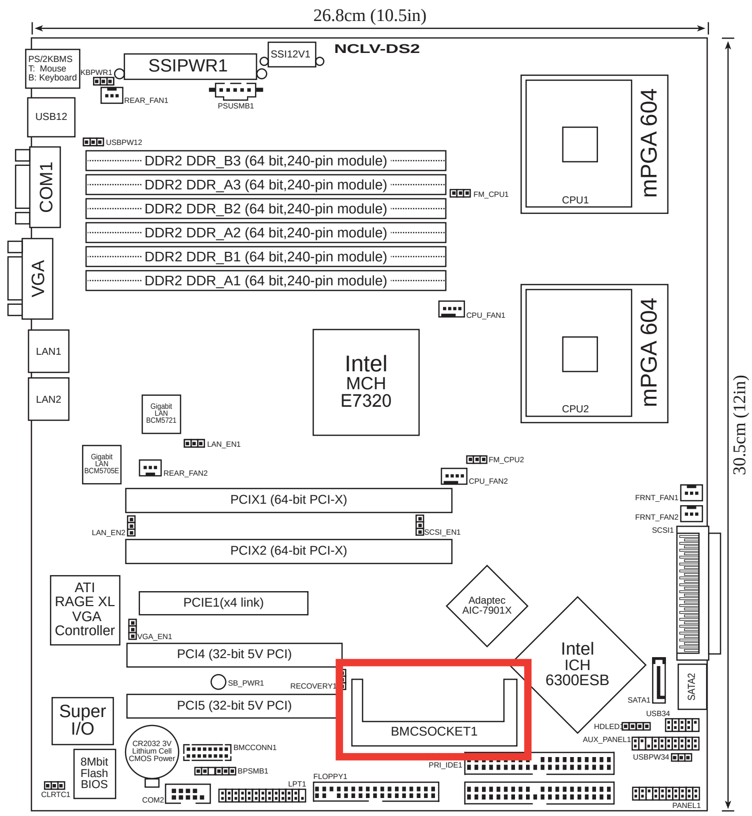
The ASUS server motherboards that support the ASMB-LE comes with a Baseboard Management Controller (BMC) socket.

Refer to the illustrations below to locate the BMC socket on different server motherboards.

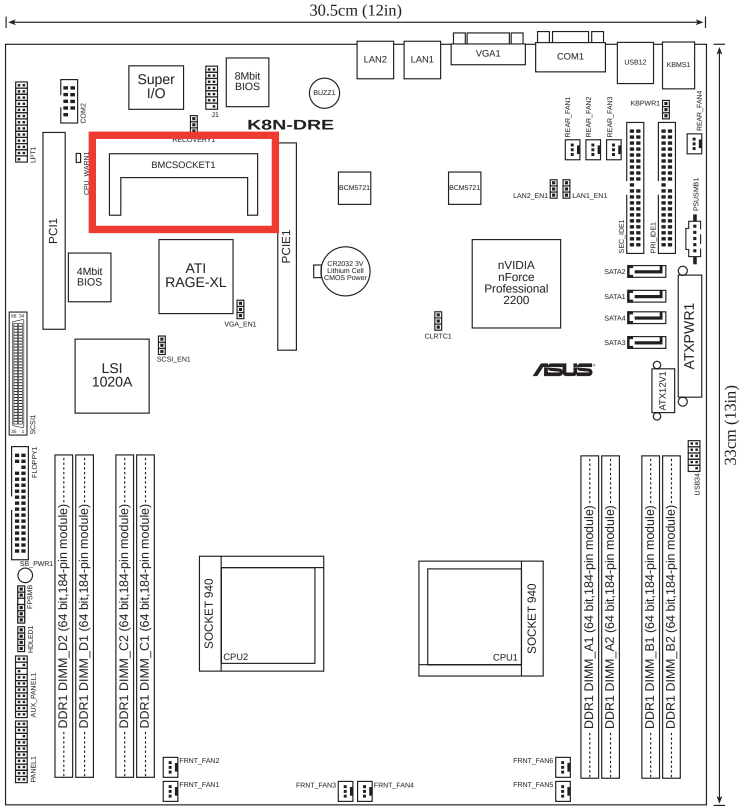
NCL-DE/1U and NCL-DE/SCSI motherboards



NCLV-DS2 motherboard



K8N-DRE motherboard



A.3 Troubleshooting

This troubleshooting guide provides answers to some common problems which you may encounter while installing and/or using ASUS ASMB-LE. These problems requires simple troubleshooting that you can perform by yourself. Contact the Wireless LAN Technical Support if you encounter problems not mentioned in this section.

Problem	Solution
The local/central server cannot connect to the ASMB-LE board.	1. Check if the LAN cable is connected to the LAN port for server management. See page A-2 for details. 2. Check if the remote server LAN port is working properly. If you have not previously installed the LAN controller driver, install the same using the system support CD. 3. Make sure the IP address of both the remote and local/central servers are on the same subnet. 4. Set the remote server IP address and MAC address using the ASUS Host Management Controller Setup. See Chapter 2 for details.
The ARC cannot receive PET information from the remote server.	Install SNMP service. See section“3.1.11 Viewing PET information” for details.
Short Message Service (SMS)	1. Check if the USB cable is connected properly. 2. Check if your smart phone (ASUS P505) is working properly. 3. Install Microsoft® ActiveSync. 4. Set the phone number.
Serial Over LAN (SOL)	1. Check the BIOS remote console setting. See section 2.4 for details. 2. Check if the firmware baud rate is the same as the BIOS setting. See section 2.5.3 for details.